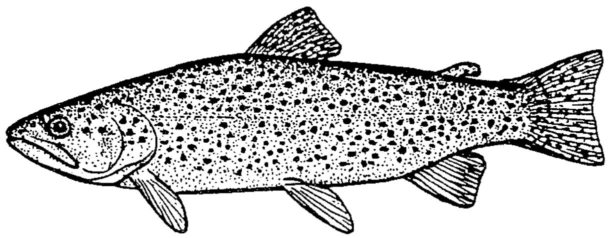
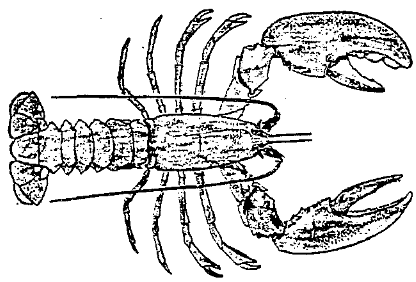
DIOXIN MONITORING PROGRAM

STATE OF MAINE

1994





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Acknowledgements

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EXECUTIVE SUMMARY

The goal of Maine's Dioxin Monitoring Program, established in 1988 by the Maine Legislature, is "to determine the nature of dioxin contamination in the waters and fisheries of the State". Charged with administration of the program, the Department of Environmental Protection (DEP) is required to sample fish once a year below no more than 12 bleached pulp mills and municipal wastewater treatment plants. DEP is also required to sample sludge from the same facilities once each quarter to determine the sources.

The Dioxin Monitoring Program is coordinated with other ongoing programs conducted by the Department, the US Environmental Protection Agency and dischargers of wastewater. DEP incorporates the results of all studies into a report to the Natural Resources Committee during the following winter-early spring. Costs of sample collection and analysis are assessed to the selected facilities. Payment of the fees is a condition of the waste discharge license granted by the state for continued operation of the selected facilities. In 1994 sample collection for this program was coordinated with that of the Surface Water Ambient Monitoring Program which facilitated sample collection for both programs.

Conclusions:

1. Concentrations of dioxin (TCDD) and international toxic equivalents (I-TE) in fish from the Androscoggin, Kennebec, Penobscot, Presumpscot, Salmon Falls, and West Branch of the Sebasticook Rivers exceeded the Department of Human Services Bureau of Health's maximum acceptable concentrations (BOH MAC) for the protection of consumers from an increased cancer risk of one in one million (10^{-6}) (0.15 ppt) or for protection of consumers from adverse reproductive effects (0.37 ppt).

2. Concentrations of TCDD and I-TE remained essentially similar to those of 1993 in 20 samples, decreased in 12 samples, and increased in 6 samples.

3. TCDD and I-TE concentrations increased in bass from Rumford on the Androscoggin River, in brown trout and suckers at Fairfield, in suckers at Sidney, and in bass at Augusta on the Kennebec River, and in suckers at South Lincoln on the Penobscot River since 1993. However, there was no evidence of increases in discharges from the known sources in any of these rivers over the same time period. Increases seemed more related to the capture of larger fish

or unexplained variability rather than to any increased discharge of dioxin in 1994.

4. TCDD and I-TE concentrations were highest in fish from the Androscoggin River compared to fish from other rivers as was the case in 1993.

5. TCDD and I-TE concentrations were below the BOH MAC in the meat of lobsters from all sites sampled. This limit was developed for fish, for which the meal size is usually greater than for lobster tomalley. Therefore this limit cannot be used to evaluate the significance of the concentrations in tomalley. However, concentrations in the tomalley exceeded those in the meat by 7-234 fold. Concentrations were slightly lower measured in 1993, which prompted the BOH lobster tomalley consumption advisory in 1994 (Appendix 1). The three reference sites (Brave Boat Harbor in Kittery, Saco Bay at Scarborough, and Machias Bay at Machias) had the lowest concentrations with Machias Bay having the lowest and the other two having similar concentrations. The Presumpscot River Estuary, Penobscot River Estuary, and Kennebec River Estuary had substantially (increasing in order) higher concentrations than the reference sites as was the case in 1993.

6. Currently fish consumption advisories exist for the Androscoggin River, Kennebec River below Skowhegan, and Penobscot River below Lincoln. An advisory on lobster tomalley exists along the entire coast of Maine.

Recommendations:

1. The Dioxin Monitoring Program is scheduled to terminate at the end of 1995. The program serves a useful purpose in monitoring the occurrence of dioxin in fish and shellfish to aid in the evaluation of risk to human and ecological health. The program should be continued until there is no longer any risk from dioxin in fish and shellfish.

2. The program should be amended to include all facilities likely to discharge dioxin.

INTRODUCTION

The goal of Maine's Dioxin Monitoring Program, established in 1988 by the Maine Legislature, is "to determine the nature of dioxin contamination in the waters and fisheries of the State". Charged with administration of the program, DEP is required to sample fish once a year below no more than 12 bleached pulp mills and municipal wastewater treatment plants suspected as sources of dioxin. The Department is also required to sample sludge once a quarter from the same facilities. The monitoring program is to be coordinated with other ongoing programs conducted by the Department, US Environmental Protection Agency, or dischargers of wastewater, and the Department must seek to incorporate the results of all studies into a report due the Energy and Natural Resources Committee by 1 December of each year. Costs of sample collection and analysis are to be assessed as a fee to the selected facilities. Payment of the fees is a condition of the waste discharge license granted by the state for continued operation and discharge of wastewater to waters of the State.

Due to continuing controversy over the effects of dioxin on human and ecological health, the US Environmental Protection Agency (EPA), announced that in 1991 it would begin a thorough scientific reassessment of dioxin. EPA proposed that the process would be open to the public and consequently held several meetings to share information and receive comments. Draft reports on a wide range of issues were available in 1992, 1993, and 1994. Initial results indicate that dioxin may exhibit reproductive and developmental effects, immuno-toxic effects, and neuro-toxic effects at concentrations nearly as low or lower than commonly thought to promote cancer (Frakes, 1992; Graham, 1992; Hughes, 1992; Silbergeld, 1992). Currently the reports are undergoing peer review, with final reports planned for late 1995.

For the purpose of water quality management, the Department of Human Services' Bureau of Health (BOH) has recommended the following maximum allowable concentrations (MAC) of 2378-TCDD in fish fillets in order to protect human consumers of contaminated fish against certain involuntary health risks (Frakes, 1990). "For a one in one million (10^{-6}) upper limit cancer risk the concentration of 2378-TCDD in the edible portion (fillets) of fish should not exceed 0.15 ppt (parts per trillion) and for a one in one hundred thousand (10^{-5}) upper limit cancer risk the concentration of 2378-TCDD in the edible portion (fillets) of fish should not exceed 1.5 ppt. For protection against adverse reproductive effects, the concentration of 2378-TCDD in the edible portion (fillets) of fish should not exceed 0.37 ppt (parts per trillion)." Although no risk concentration has been selected, the Board of Environmental Protection has used a risk of 10^{-6} in setting a limit for dioxin in the sludge spreading rules in 1986. For this report concentrations of dioxin in fish above any of these recommendations will be reported as exceeding BOH's recommended safe levels (BOH MAC).

For managing the risk to consumers of fish already contaminated with dioxin, the BOH publishes fish consumption advisories for dioxin for particular waterbodies using risk assessment methods with a threshold of 1.5 ppt. Based on recent research, BOH is also concerned with potential reproductive effects in women from consuming a single fish meal. There are a number of reports in the literature that document impacts ranging from enzyme effects to reproductive effects at different doses. Once EPA's Dioxin Reassessment is completed (scheduled for 1995), an evaluation can be made of the effect of a single meal of fish from Maine rivers.

OBJECTIVES

Given the decline in levels of dioxin found in the fish in the 1991 and 1992 programs and relatively similar levels found in 1993, the primary objective of the 1994 program was to collect fish samples from the appropriate sites and species from each river such that accurate, complete, and current data are available to meet the overall goal of the program. The program design included sampling at least one site below each major source to document trends and sampling of historic sites that showed dioxin above the BOH MAC, whether or not any fish consumption advisories were issued. Another criterion was to sample fish from any new sites or important species suspected of being contaminated with dioxin.

At sites affected by a single discharger, annual sampling will continue until there are at least two consecutive years where dioxin is below the BOH MAC and is not increasing. At sites affected by more than one discharger, each discharger will continue to be included in the annual sampling program until enough evidence has been gathered to demonstrate that dioxin is no longer present in the discharge in significant quantities. Such evidence must include, but not be limited to (1) at least 8 consecutive sludge analyses equally distributed over all seasons for a minimum of two years that show no 2378-TCDD detected at a suitably low detection level, (2) full congener analysis for all 2378 substituted dioxins and furans, (3) other pertinent information such as process changes, changes in hook-ups that show reductions in the level of dioxins being discharged to insignificant levels.

PROGRAM DESIGN

The 1994 program was initially drafted by a team representing DEP, BOH, the Department of Marine Resources (DMR) and the Department of Inland Fisheries and Wildlife (DIFW) according to the objectives listed above. Following a meeting with representatives of the participating facilities and the Natural Resources Council of Maine on 17 May 1994, the program was finalized.

Most of the facilities in the program already sample sludge or effluent as part of their Maine Sludge Spreading Permit or Waste Discharge License or Federal NPDES permit. Data from those programs provide adequate information about sources of dioxin. Therefore, no additional sludge samples were collected as part of this program.

Station locations along with target fish species are shown in Table 1. Station location maps show exact locations of collections (Appendix 6). The number of sites was the same as in 1993, although some locations were different. Eels were not collected at Bangor or Richmond as in 1993 since the results were not different than for other species in the same general area. In 1993 lobsters from the reference site (Saco Bay) had elevated levels of dioxin in the tomalley. Therefore, in 1994 lobsters were collected from two additional reference sites, Machias Bay in eastern Maine and Brave Boat Harbor in southern Maine, to determine the extent of contamination along the coast.

The preferred sampling time is late in the summer when fish are likely to be more contaminated after being exposed to higher concentrations of dioxin during low river flows and after significant growth has occurred. At some locations there has been a problem collecting enough fish later in the summer. At these, sampling began in mid-May to try to insure that a suitable sample was collected. These sites were also visited after the beginning of July. If fish were captured during the later period, those samples were submitted for analyses. Otherwise, the fish collected during the early period were used. Sampling at other sites began in July. Actual dates of collection are shown in Appendix 7.

As in previous years, ten game fish and ten bottom feeders were collected at most stations (Appendix 2). For new sites, two composites of five individuals were analyzed. For historic sites, game fish were combined into 5 two-fish composites of skinless fillets, while the bottom feeders were combined into 2 five-fish composites of whole fish. Each fish was ground and stored separately. Half of the ground sample of each fish was combined into the composites.

Table 1. Sample stations, facilities, and species for the 1994 Dioxin Monitoring Program

STATION	FACILITY	SPECIES
Androscoggin R		
Rumford	Boise Cascade	bass, sucker
Jay (Bean Is)	Boise Cascade	bass, sucker
Liv Fls(Otis imp)	International Paper	bass, sucker
Turner (GIP)	International Paper	bass,sucker,hornpout
Lisbon Falls	BC & IP	trout, bass, sucker
Kennebec R		
Shawmut Dam	SD Warren	trout, bass, sucker
Sidney	Scott Paper	trout, bass, sucker
Augusta	KSTD	trout, bass, sucker
Phippsburg	Statler	lobster
Penobscot R		
S Lincoln	Lincoln P&P	bass, sucker
Veazie	James River Co	bass, sucker
Stockton Springs	JR & LP&P	lobster
Presumpscot		
Westbrook	SD Warren	bass, sucker
Portland	SD Warren	lobster
Salmon Falls R		
S Berwick	Town of Berwick	bass, sucker
Sebasticook R		
E Br Newport	Town of Corinna	bass/w perch, sucker
W Br Palmyra	Town of Hartland	bass, sucker
Reference site(s)	all	
Presumpscot R		
Windham		bass, sucker
Machias Bay, Machias		lobster
Saco Bay, Scarborough		lobster
Brave Boat Harbor, Kittery		lobster

The ten lobsters from each site (including both new sites) were divided into 2 composites of five animals each. Although this strategy did not allow a meaningful statistical analysis of any differences among the sites, relative differences among sites in 1993 were obvious. Both muscle tissue (meat) and hepatopancreas (tomalley) were analyzed.

The last time full congener analyses were conducted was in 1991. Application of those results to 1992 and 1993 data resulted in significant increases in I-TEs. Significant reductions in the discharge of dioxin from many of the sources have occurred during this time. For these reasons all samples in the 1994 program were analyzed for all the 2378 substituted congeners to provide complete, accurate, and current data.

SAMPLING PROCEDURES

Fish were collected by DEP with assistance of representatives of the participating facilities and selected volunteer anglers. Upon capture, fish were immediately killed, weighed and measured, rinsed in river water, wrapped in aluminum foil with the shiny side out, labelled, and placed in a cooler on ice for transport to the lab. Lobsters and eels were purchased directly from commercial fishermen at each site and placed in plastic garbage bags in a cooler on ice for transport to the lab. Chain of custody forms were used to record all field information and document all transfers.

In the DEP lab all samples were frozen to await shipment to Midwest Research Institute (MRI) in Kansas City, Missouri for analysis. Fish were sent whole to be filleted at MRI while lobster meats and tomalleys were removed from the shell by DEP personnel and shipped to MRI. All other procedures generally followed EPA's Sampling Guidance Manual for the National Dioxin Study (July 1984). A laboratory log was kept for an inventory of samples in the lab at any time and final disposition.

RESULTS AND DISCUSSION

It was not possible to collect all species and numbers of fish targeted. A description of fish collected and analytical results follows for each sample location. Results show that in 1994 concentrations of dioxin and furan in fish were essentially similar to 1993 levels in 20 samples, lower in 12 samples and higher in 6 samples (Table 2, Appendix 2). Some differences were statistically different than in previous years while others were not. Concentrations in whole suckers were higher than in trout fillets which were in turn higher than in bass. Both TCDD and I-TE are presented. I-TE are shown as a range with non-detects calculated at zero and at the detection level. Therefore, the actual value falls somewhere within the range. All analyses were performed using non-detects at zero. Statistical analysis of differences among years at a given site was performed using the paired Student's t-test at p=.05.

Androscoggin River

Rumford Ten smallmouth bass were collected from the river from just below the discharge from Boise Cascade's bleached kraft pulp and paper mill in Rumford downstream about 4 miles to Dixfield. Nine white suckers were caught from Dixfield downstream about 3 miles. Concentrations of both TCDD and international toxic equivalents (I-TEs) in bass were above the BOH MAC. TCDD concentrations were statistically higher than in 1993 but I-TE concentrations were not. Both TCDD and I-TE concentrations in whole suckers were above the BOH MAC even when normalized to skinless fillets (dividing by 3.5 based on historical comparisons between fillets and whole fish). Concentrations of both were, however slightly lower than in 1993. Larger bass were captured in 1993 and 1994 than in previous years, which is likely the reason concentrations were higher in those years. It is unlikely that the mill discharges were a cause since effluent data show that concentrations of TCDD and TCDF in the discharge from the mill have remained relatively constant in the last couple years (Appendix 4).

Jay Ten smallmouth bass and ten white suckers were collected near Bean Island in the Jay Impoundment, which is about 20 miles below Boise Cascade and in the impoundment into which International Paper Company's bleached kraft mill discharges about 1 mile downstream. Concentrations of TCDD and I-TE in bass fillets were above the BOH MAC, although much lower than in bass fillets from the Rumford site. Concentrations of TCDD and I-TE were slightly higher than in 1993. TCDD and I-TE concentrations in whole suckers were above the BOH MAC when normalized to skinless fillets and also slightly higher than in 1993. These results are consistent with effluent data which show that concentrations

TABLE 2. DIOXIN AND FURAN LEVELS IN MAINE FISH AND SHELLFISH (pg/g)

WATER/STATION	SPECIES	TYPE	EPA NDS/NBS 1984-86 TCDD	DEP DIOXIN MONITORING PROGRAM 1988-1990 TCDD	1988-1990 I-TE	1991 TCDD	1991 I-TE	1992 TCDD	1992 I-TE	1993 TCDD	1993 I-TE	1994 TCDD	1994 I-TE
ANDROSCOGGIN R													
Gilead	sucker	w	1.8f/6.5w										
Rumford	bass	f				1.4	2.3-2.8	0.6	1.0-1.2	2.9	4.5-5.4	3.8	5.7-6.2
	sucker	w						3.0	7.4-8.0	5.8	13.6-14.6	4.0	11.4-11.9
Riley	sucker	w	2.1f/13w										
Jay	bass	f		17.6	24.0-29.1			1.2	1.9-2.3	1.4	1.8-2.2	1.6	2.2-2.8
	sucker	w						5.4	12.9-13.9	4.5	10.9-11.8	4.7	11.5-12.3
Livermore Falls	bass	f				2.4	3.1-3.3	1.1	1.4-1.5	1.4	1.6-1.8	1.4	1.6-2.3
	sucker	w						3.8	7.4-8.0	3.6	6.8-7.3	2.2	4.8-5.3
N Turner	sucker	w	6.2f/30w										
Turner-GIP	bass	f	3.7f/24w										
	sucker	w	8.3f/29w										
	bullhead	w	7.8f/29.6w										
Auburn-GIP	bass sm	f						1.7	2.6-2.8	1.2	1.8-1.9	1.3	2.0-2.7
	bass lm	f						1.1	1.6-1.8				
	sucker	w						5.6	14.3-15.4	3.7	9.0-9.8	1.6	4.4-5.4
	bullhead	w								2.1	3.0-3.3	1.3	2.3-2.8
Lisbon Falls	trout	f		5.3	6.5-6.9								
	bass	f		4.5	5.5-5.8			0.7	1.0	1.2	1.7-1.8	0.6	0.8-1.7
	sucker	w	5.1f/12w					3.4	8.1-8.7	2.7	6.1-6.6	2.4	5.8-6.2
Brunswick	sucker	w	19.0										
	carp	f	11.0										
BEARCE LAKE													
Baring	pickerel	f	<0.1										
BRAVE BOAT HARBOR													
Kittery	lobster	m										<0.1	<0.1-1.2
	lobster	t										1.3	9.7-11.5
JONES CREEK													
Scarborough	clam	m						<0.1	0.02-0.3				

TABLE 2. (cont.)

WATER/STATION	SPECIES	TYPE	EPA NDS/NBS 1984-86 TCDD	DEP DIOXIN MONITORING PROGRAM 1988 TCDD	1990 I-TE	1991 TCDD	1991 I-TE	1992 TCDD	1992 I-TE	1993 TCDD	1993 I-TE	1994 TCDD	1994 I-TE
KENNEBEC R													
Madison	bass	f						<0.1	0.02-0.1				
	sucker	w						0.1	0.3				
Fairfield	trout	f		6.2	6.9-8.0			1.4	1.6-1.8	1.4	1.6-1.9	2.2	2.5-3.8
	bass	f				1.4	1.6-1.7	0.6	0.6-0.7	1.5	1.7-2.0	0.9	1.1-1.8
	sucker	w	6.4	10.3	16.8-18.1			2.0	3.1-3.3	1.6	2.2-2.6	2.2	2.9-3.8
Sidney	bass	f	20.3w			1.0	1.4-2.4	0.4	0.6-1.0	0.6	0.8-1.4	0.3	0.4-1.3
	sucker	w	1.2f/11.4w					2.7	4.4-4.8	1.5	2.5-2.7	2.3	3.0-4.0
Augusta	trout	f		2.2	2.9-4.9			1.9	2.5-4.3				
	bass	f						0.4	0.6-1.0	0.6	0.9-1.5	1.0	1.3-3.7
	sucker	w		5.0	7.3-8.4			1.5	2.6-2.8	1.9	3.3-3.6	2.3	4.0-5.8
Hallowell	smelt	c						0.2	0.5-0.8				
Richmond	eel	f								0.6	0.8-1.4		
Phippsburg	clam	m						0.3	0.6-0.9				
	lobster	m								0.2	0.3-1.2	<0.1	<0.1-1.6
	lobster	t								7.9	27.5-27.6	6.5	23.4-26.6
MACHIAS BAY													
Machias	lobster	m										<0.1	<0.1-0.6
	lobster	t										0.7	6.1-7.4
MESSALONSKEE LAKE													
Belgrade	bass					<0.0	0.04-0.3						
NARRAGUAGUS R													
Cherryfield	fallfish	w	<1.0										
NORTH POND													
Chesterfield	sucker	w	0.37										
	pickerel	f	<0.1										

TABLE 2. (cont.)

WATER/STATION	SPECIES	TYPE	EPA NDS/NBS 1984-86 TCDD	DEP DIOXIN MONITORING PROGRAM 1988-1990 TCDD	1988-1990 I-TE	1991 TCDD	1991 I-TE	1992 TCDD	1992 I-TE	1993 TCDD	1993 I-TE	1994 TCDD	1994 I-TE
PENOBSCOT R													
E Branch	bass	f		<0.1	0.09-0.2								
	sucker	w		<0.4	0.02-0.6								
E Millinocket	bass	f		<0.2	0.4-0.8								
	sucker	w		0.7	3.6-4.2								
N Lincoln	bass	f		<0.4	0.2-0.8								
	sucker	w		<0.5-20.	2.0-41.6								
S Lincoln	bass	f	5.0	1.7	2.3-2.7	0.9	1.2-1.3	0.7	1.0-1.2	1.2	1.6-1.8	0.4	0.4-1.7
	sucker	w		37.0	66.4-67.2			3.3	6.8	1.7	3.5-3.6	2.2	5.8-6.1
Passadumkeag	bass	f		1.8	2.9								
	sucker	w		2.8	7.6-7.7								
Milford	bass	f		0.9	1.4-1.7			0.3	0.4-0.5				
	sucker	w		9.7	19.9-20.1			2.2	4.6				
Veazie	bass	f	4.6w	1.9	2.4-2.6	1.2	1.5-1.7	0.4	0.6	0.6	0.8-1.0	0.2	0.2-1.3
	sucker	w	2.6f/7.6w	5.9	9.8-9.9	2.5	4.9-5.0	2.2	4.8-4.9	1.1	2.7-3.0	0.6	5.5-7.0
Bangor	eel	w								1.0	1.1-1.2		
Bucksport	clam	m						0.1	0.8-0.9				
Stockton Springs	lobster	m								0.1	0.3-1.1	<0.1	0.1-1.0
	lobster	t								4.0	28.0	2.3	18.1-27.9
OWLS HEAD	mussel	m	<0.8										
PISCATAQUIS R													
Sangerville	bass	f				<0.2	0.03-0.3						
	trout	f				<0.4	0.03-0.4						
	sucker	w				0.26	0.6-0.7						
Howland	bass	f		<0.2	0.02-0.6								

TABLE 2. (cont.)

WATER/STATION	SPECIES	TYPE	EPA	DEP										
			NDS/NBS	DIOXIN MONITORING PROGRAM										
			1984-86	1988- 1990		19 91		19 92		19 93		19 94		
			TCDD	TCDD	I-TE	TCDD	I-TE	TCDD	I-TE	TCDD	I-TE	TCDD	I-TE	
PRESUMPSCOT R														
Windham	bass	f								<0.1	<0.1-0.3	<0.1	<0.1-1.1	
	sucker	w								0.3	0.7-0.8	0.2	1.4-2.4	
Westbrook	bass	f		1.8	2.4-4.5	0.2	0.2-0.4	0.1	0.2-0.4	<0.2	0.1-0.5	0.2	0.3-1.2	
	pickerel	f		<2.6	0.06-5.9									
	w perch	f		1.2	2.5-3.1	0.4	0.9-1.0							
	sucker	w	5.2	5.1	8.2-9.6	0.6	1.6-1.7	0.3	0.8-0.9	1.1	1.8-2.3	0.9	2.1-3.7	
Falmouth	clam	m												
Portland	lobster	m								<0.1	0.1-0.8	<0.1	0.2-1.0	
	lobster	t								3.4	18.5-18.7	2.5	17.2-21.3	
ST CROIX R														
Woodland	bass	f		0.3	0.5-1.0	<0.1	0.04-0.3							
Calais	sucker	w	<0.7	0.6	1.0-1.1									
ST JOHN R														
Frenchville	sucker	w										0.1	0.2-1.0	
Madawaska	y perch	f		<0.5	0.08-0.8									
	brook trout	f										<0.3	<0.1-2.3	
	sucker	w										<0.1	0.2-0.8	
SACO R														
Dayton	sucker	w	<0.3											
SACO BAY														
Scarborough	lobster	m								<0.1	0.1-0.8	<0.1	<0.1-0.8	
	lobster	t								2.0	11.3-14.6	1.3	9.7-12.0	
SALMON FALLS R														
S Berwick	bass	f		0.4	0.5-0.6					0.2	0.2-0.9	0.5	0.7-3.3	
	pickerel	f		0.2	0.3									
	sucker	w		1.5	2.1-2.2			2.4	3.4-3.6	1.9	3.6-3.8	2.1	4.7-6.1	

TABLE 2. (cont.)

WATER/STATION	SPECIES	TYPE	EPA NDS/NBS 1984-86 TCDD	DEP DIOXIN MONITORING PROGRAM 1988- 1990 TCDD	1988- 1990 I-TE	19 91 TCDD	19 91 I-TE	19 92 TCDD	19 92 I-TE	19 93 TCDD	19 93 I-TE	19 94 TCDD	19 94 I-TE
SANDY P													
N Anson	bass	f	<1.0										
SEBAGO L													
Naples	bass	w	<0.6										
SEBASTICOOK R													
E Br Newport	bass sm	f						0.1	0.3-0.4				
	bass lm	f	<0.2					<0.2	0.2-0.4				
	w perch	f		1.0	1.6-2.1								
W Br Palmyra	bass	f		1.2	1.4-1.8			0.4	0.5-0.6	0.9	1.2-1.6	0.4	0.4-1.3
	pickerel	f	<0.1					0.2	0.2				
	sucker	w	1.57	3.3	4.3-4.6			1.1	1.4-1.6	1.0	2.6-2.7	1.2	4.0-4.3
WEBBER POND													
Vassalboro	bass	f				<0.0	0.04-0.4						

f=fillet
m=meat
t=tomalley
w=whole

I-TE= International toxic equivalents (range at nd=0 and nd=mdl) using EPA 1989 toxic equivalency factors (TEF).

of TCDD have not changed much in the last couple of years as shown by monitoring of sludge (Appendix3) and effluent (Appendix 4).

Livermore Falls Ten smallmouth bass and ten white suckers were captured in the Otis Impoundment, approximately 1.5-3 miles below the discharge from International Paper Company's Jay mill. Concentrations of TCDD and I-TE in bass were above the BOH MAC and similar to those in 1993. Concentrations were slightly lower than those from the Jay site. Concentrations of TCDD and I-TE in whole suckers were above the BOH MAC when normalized to skinless fillets. Concentrations of both were lower than in 1993 and the concentration of TCDD was statistically lower than in 1992. Both were also lower than in the Jay Impoundment. The results for bass are consistent with the relatively constant discharge of dioxin from Boise and International Paper Company mills in the last couple of years as shown by monitoring of sludge (Appendix 3) and effluent (Appendix 4) but reductions in concentrations in suckers are unexplained.

Auburn-GIP Ten smallmouth bass, nine brown bullheads, and ten white suckers were collected in Gulf Island Pond (GIP) near Seagull Island near the deep hole, about 25-30 miles below International Paper Company. Concentrations of TCDD and I-TE in bass were above the BOH MAC, similar to those in 1993 and slightly lower than upstream sites. Concentrations of TCDD and I-TE in whole suckers were above the BOH MAC when normalized as fillets. Both were lower than at upstream stations and lower than in 1993 continuing a trend began in 1992. Concentrations of TCDD and I-TE in brown bullhead were above the BOH MAC when normalized as fillets and were similar to those of bass but lower than in 1993. These results are seemingly at odds with the slight increase in TCDF discharged from IP in 1994 compared to 1993, but may represent the continuing depuration of fish in the relatively low levels in the discharges of recent years.

Lisbon Falls Ten smallmouth bass and ten white suckers were captured in the Pejepscot Impoundment, about 45-50 miles below International Paper Company. Concentrations of TCDD and I-TE in bass were above the BOH MAC. Both were statistically lower than in 1993 but the concentration of TCDD was similar to that of 1992. Both were the lowest of all the Androscoggin River sites. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets. Both were slightly lower than in 1993 continuing the trend first measured in 1992.

Brave Boat Harbor

Kittery Ten lobsters were collected from a lobster fisherman at Brave Boat Harbor in Kittery. This site was added as a reference site for southern Maine in 1994. Concentrations of TCDD and I-TE in the meat were below the BOH MAC. Concentrations of both in the hepatopancreas or "tomalley" were 13-97 times that in the meat and similar to those from Saco Bay. The source of dioxin to these lobsters is unknown. These concentrations may represent background in Southern Maine as affected by local sources and/or long-range transport and deposition.

Kennebec River

Fairfield Five brown trout, ten smallmouth bass, and seven white suckers were collected from July through August from the Shawmut Dam to the I-95 bridge, about 7-8 miles below SD Warren's bleached kraft pulp and paper mill in Skowhegan. Concentrations of TCDD and I-TE in brown trout were above the BOH MAC. Both were statistically higher than in 1993 perhaps due to slightly larger fish in 1994. Concentrations of TCDD and I-TE in bass were above the BOH MAC but lower than in 1993 and more similar to those of 1992. Concentrations of both were lower than in brown trout as in 1992. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets and similar to those of the brown trout. Both TCDD and I-TE concentrations were slightly higher than in 1993 and similar to those of 1992 and generally related to fish size each year. Both were similar to concentrations at other sites on the Kennebec. Concentrations of both in sludge (Appendix 3) and effluent (Appendix 4) from the SD Warren mill are variable but show no significant changes in the last two years.

Sidney Ten smallmouth bass and ten white suckers were collected from the river within one mile of the Sidney boat landing, about 25 miles below the SD Warren mill in Skowhegan and about 9-10 miles below the discharges from the Scott Paper mill in Winslow and the Kennebec Sanitary Treatment District's discharge in Waterville. Concentrations of TCDD and I-TE in bass were above the BOH MAC and slightly lower than in 1993, similar to those from 1992. Both were the lowest of all sites on the river. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets, although higher than in 1993 and slightly lower than in 1992. Concentrations of TCDD were similar to that of all other stations on the river. Concentrations of TCDD in sludge and effluent from each of the three sources have remained essentially unchanged or declined slightly in the last couple of years (Appendix 3).

Augusta Four smallmouth bass and ten white suckers were collected about 2-2.5 miles below the Edwards Dam in Augusta. In addition to the upstream sources at the Sidney site, until closing in early 1995, Statler Tissue Company discharged effluent just above the dam. Concentrations of TCDD and I-TE in bass were above the BOH MAC. Both were higher than in 1992 and 1993 and were the highest on the river, slightly above those from Fairfield, although the sample size was half that of the other stations. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets. Both were slightly higher than in 1993 continuing a trend that began in 1992. The suckers were larger in 1994 and smallest in 1993 and, therefore, do not explain the entire trend. Concentration of TCDD was similar to other stations on the river but the concentration of I-TE was the highest of all stations. Since Statler recycled waste paper, dioxin in its sludge reflected the average content in its paper supply and was low but detectable and relatively constant (Appendix 3).

Phippsburg Ten lobsters were collected from a lobster fisherman fishing the estuary near Cox Head, approximately 45 miles below Augusta. This site is downstream of all the sources on the Androscoggin and Kennebec Rivers. TCDD and I-TE in the meat were below the BOH MAC. However, both were highly elevated in the hepatopancreas or "tomalley", 65-234 times that found in the meat. These concentrations were slightly lower than in 1993. This site had the highest TCDD concentration of all sites monitored again in 1994. Consequently the Bureau of Health has issued a consumption advisory on 2 February 1994 regarding tomalley for the entire coast (Appendix 1).

Machias Bay

Machias Ten lobsters were collected from a lobster fisherman in Machias Bay at Machias. This site was added as a reference site for eastern Maine in 1994. Concentrations of TCDD and I-TE in the meat were below the BOH MAC. However, concentrations of both in the hepatopancreas or "tomalley" were 7-61 times that in the meat. This site had the lowest concentrations of all the lobster sites sampled and represents a more pristine reference site than Saco Bay or Brave Boat Harbor in Southern Maine. The source of dioxin to these lobsters is unknown.

Penobscot River

South Lincoln Ten smallmouth bass and ten white suckers were collected near the boat ramp in South Lincoln, about 3-4 miles below Lincoln Pulp and Paper Company's bleached kraft mill in Lincoln. Concentrations of TCDD and I-TE in bass were above the BOH MAC and statistically lower than in

1993 but only slightly lower than in 1992. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets. Concentrations of TCDD and I-TE were slightly higher than in 1993 as was the average size of the fish collected. Concentrations in both species were higher than at Veazie, the only other site on the river. Recent sludge data (Appendix 3) and effluent data (Appendix 4) show a reduction in amounts of dioxin discharged since 1988 which is consistent with declines in concentrations in fish from that time.

Veazie Ten smallmouth bass and seven white suckers were collected from the Veazie Impoundment about 7-8 miles below James River's bleached kraft mill in Old Town. Concentrations of TCDD and I-TE in bass fillets were marginally above the BOH MAC, lower than in 1993 and up and down in previous years generally matching the pattern of relative fish size. Concentrations of TCDD and I-TE in suckers were marginally above the BOH MAC when normalized as fillets. The TCDD concentration was lower than in 1993 continuing a trend that began in 1991 and not related to fish size. However, the concentration of I-TE increased slightly in 1994 halting a trend similar to TCDD. Nevertheless, there does appear to be an overall decline in concentrations of both likely a result of reductions in the amount of TCDD discharged from the mill in 1993 and 1994 compared to the previous years (Appendices 3 and 4).

Stockton Springs Ten lobsters were collected from a lobsterman fishing near Verona Island, about 40 miles below James River's mill. Concentrations of TCDD and I-TE in the meat were below the BOH MAC. But concentrations in tomalley were above 23-180 times higher than in the meat. The concentration of TCDD in tomalley was lower (but not statistically) than in 1993 while the concentration of I-TE was statistically lower than in 1993. This site had the second highest concentrations of all the sites monitored.

Presumpscot River

Windham Ten smallmouth bass and ten white suckers were collected below North Gorham Pond as a reference site. Concentrations of TCDD and I-TE in bass were below the BOH MAC. Concentrations of TCDD in suckers was below the BOH MAC while I-TE were above the BOH MAC, similar to 1993, when normalized as filets. There are no known sources of dioxin upstream of this site. The concentration of I-TE may represent background from atmospheric deposition although concentrations of I-TE at other reference sites in previous years were below the BOH MAC.

Westbrook Five smallmouth bass and ten white suckers were collected near the US Route 302 bridge about 1.5 miles downstream of the discharge from SD Warren's bleached kraft pulp and paper mill. Concentrations of TCDD and I-TE in the bass were marginally above the BOH MAC and generally similar to those in all years since 1992. Concentrations of TCDD and I-TE in whole suckers were above the BOH MAC when normalized as fillets and similar to those in 1993. Concentrations of TCDD in sludge and effluent from the mill continue to be relatively low since 1990-91 (Appendices 3 and 4). It has been impossible to collect a suitable number of bass from this site since the beginning of the program in 1984.

Portland Ten lobsters were collected from a lobster fisherman fishing at the mouth of the estuary off East End Beach about 10-11 miles below the SD Warren discharge. Concentrations of TCDD in meat were not above the BOH MAC and I-TE were marginally so. Both were highly elevated in the hepatopancreas or "tomalley", at 25-86 times than in the meat but were slightly lower than in 1993. This site had the lowest concentrations of TCDD and I-TE of all the suspected contaminated sites, but was substantially higher than the "reference" site at Saco Bay.

Saco Bay

Scarborough Ten lobsters were collected from a lobster fisherman fishing off the mouth of the Scarborough River near Prouts Neck. This site was intended to be a reference site near the 1992 reference site for the soft-shelled clams. TCDD and I-TE concentrations in the meat were below the BOH MAC. However, concentrations of both in the hepatopancreas or "tomalley" were 13-97 times that in the meat and slightly lower than in 1993. The source of dioxin to these lobsters is unknown. EPA estimates that nationally solid waste incinerators and medical waste incinerators are major sources of dioxin to the atmosphere and that short and long-range transport and deposition are major inputs of dioxin to surface waters. This site is near 2 solid waste incinerators and a number of medical waste incinerators as well as many other discharges in Southern Maine. The levels found here are similar to those found at the reference site at Brave Boat Harbor in Kittery.

Salmon Falls River

South Berwick Three bass and ten white suckers were collected from the Rollinsford Impoundment about 2 miles below the discharge from the Berwick Sewer District in Berwick, whose discharge is 85% effluent from Prime Tanning. Concentrations of TCDD and I-TE in the bass were above the BOH MAC. Both were similar to concentrations in 1990, which was the last time more than one bass was caught (one other bass was caught in 1993). Concentrations of TCDD and I-TE in whole suckers were above the BOH MAC when normalized as fillets. Concentrations of TCDD were slightly higher and concentrations of I-TE were statistically higher than in 1993 possibly due to larger size. Concentrations of both were higher in both bass and suckers at this site than in the West Branch of the Sebasticook River below the Hartland Tannery discharge. There are no new effluent or sludge data to aid interpretation of trends.

Sebasticook River

West Branch at Palmyra Five smallmouth bass and ten white suckers were collected near the US Route 2 bridge about 3-4 miles below the discharge from the Town of Hartland, whose effluent is about 85% effluent from Irving Tanning Company. Concentrations of TCDD and I-TE in bass fillets were above the BOH MAC. Concentrations of TCDD were statistically lower and concentrations of I-TE were slightly lower than those in 1993, which were elevated by one large fish. Concentrations of TCDD and I-TE in suckers were above the BOH MAC when normalized as fillets and slightly higher than in 1992 and 1993. There are no new sludge data to aid interpretation of current levels of discharge.

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APPENDIX 1

MAINE BUREAU OF HEALTH

FISH CONSUMPTION ADVISORY, 10 FEBRUARY 1992

LOBSTER TOMALLEY CONSUMPTION ADVISORY, 2 FEBRUARY 1994

HUMAN SERVICES News

Office of Public Affairs & Communications
Maine Department of Human Services
State House Station 11
Augusta, Maine 04333
Tel. 289-3707

JOINT STATEMENT, FEBRUARY 10, 1992:
Department of Environmental Protection
Department of Human Services
Department of Inland Fish and Wildlife

SUBJECT: REDUCED DIOXIN LEVELS PROMPT REVISED FISH ADVISORY

CONTACT: Robert Frakes
Department of Human Services
Bureau of Health
Telephone: 289-5378

Dean Marriott, Commissioner
Department of Environmental Protection
Telephone: 289-2812

AUGUSTA - Recent tests by the Department of Environmental Protection (DEP) showed reductions in levels of dioxin in fish taken from Maine's major rivers. The results are similar to those reported by the paper industry in August 1991.

Officials say the changes reflect reduced discharges of the chemical from pulp and paper mills across the state. The improvements have prompted a revision of a fish consumption advisory issued in March 1990.

The new language raises recommended consumption limits for most segments of the population. Previous advisories that pregnant women and nursing mothers not eat fish caught in the Presumpscot River below Westbrook and the West Branch of the Sebasticook below Hartland have also been lifted.

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According to State Toxicologist Dr. Robert Frakes, data from Maine's dioxin Monitoring Program supports revising the warnings to be published in the State Open Water Fishing Regulations. However, some cautions remain in place.

"Women of childbearing age still should not eat any fish from the Androscoggin River, the Kennebec River below Skowhegan and the Penobscot River below Lincoln. Furthermore, the general public should not eat more than one fish meal per month from the Androscoggin or more than two fish meals per month from those sections of the Kennebec and Penobscot".

A "fish meal" is considered to be one 8-ounce portion.

Dioxion levels in fish have been monitored under the DEP administered program since 1988. Because even very low levels of TCDD dioxin have been linked to increased cancer rates and reproductive problems in laboratory animals, health advisories were issued in 1985, 1987 and 1990.

Commenting on the latest revision to the advisories, DEP Commissioner Dean Marriott emphasized the progress that has been made in a relatively short period of time.

"Industry has been working to reduce the formation of dioxin by actually changing the manufactoring process. The recent data would seem to indicate that these efforts are showing positive results."

A full report of the 1991 Dioxin Monitoring Program is now being prepared and will be presented to the legislature's Joint Standing Committee on Energy and Natural Resources.

HUMAN SERVICES News

Maine Department of Human Services
State House Station 11
Augusta, Maine 04333
Tel. 289-3707

FEB 02 1994

JOINT HEALTH ADVISORY

CONTACT: Maine Department of Environmental Protection
Dean Marriott, Commissioner, 287-2812
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Lani Graham, MD. MPH, Director, Bureau of Health, 287-3201
Maine Department of Marine Resources
William Brennan, Commissioner, 624-6550

AUGUSTA - Preliminary analysis of data from tests conducted on lobsters taken off the coast of Maine indicate unacceptably high concentrations of dioxin in lobster tomalley, but not in lobster meat. These results have prompted state officials to issue a health advisory against the consumption (eating) of tomalley by pregnant women, nursing mothers and women of child bearing age. This recommendation is based on the principle that developing children are considered to be at highest risk for possible injury resulting from exposure to dioxin.

Others should limit their consumption of tomalley, as dioxin found in tomalley will contribute to the overall intake of this chemical, and to cancer risk generally.

The tomalley is the soft, green substance found in the body cavity of the lobster. It functions as the liver and pancreas of the lobster serving to filter, metabolize and detoxify all substances that are

-more-

consumed by the lobster. As a result of this protective function, the tomalley concentrates certain chemicals which cannot be eliminated or detoxified.

Dioxin is a substance which has been linked to cancer and adverse birth outcomes in animals. Since 1988, Maine has been sampling fish for dioxin, but lobsters had not been included until the 1993 round of tests. This round of tests has revealed unexpectedly high concentrations of dioxin in the tomalley (13.4 - 30.7 ppt), but not in the meat.

Maine's advisory is similar to one issued by the Massachusetts Department of Public Health, and to cautionary statements issued by the seafood marketing industry.

APPENDIX 2

DIOXIN AND FURAN CONCENTRATIONS IN FISH AND SHELLFISH

1994

CODES

STATIONS

ARR	ANDROSCOGGIN RIVER AT RUMFORD
ARJ	ANDROSCOGGIN RIVER AT JAY
ARLV	ANDROSCOGGIN RIVER AT LIVERMORE FALLS
ARG	ANDROSCOGGIN RIVER AT GULF ISLAND POND, AUBURN
ARLS	ANDROSCOGGIN RIVER AT LISBON FALLS
BVB	BRAVE BOAT HARBOR AT KITTERY
KRF	KENNEBEC RIVER AT SHAWMUT, FAIRFIELD
KRS	KENNEBEC RIVER AT SIDNEY
KRA	KENNEBEC RIVER AT AUGUSTA
KRP	KENNEBEC RIVER AT PHIPPSBURG
MCH	MACHIAS BAY AT MACHIAS
PBL	PENOBSCOT RIVER AT SOUTH LINCOLN
PBV	PENOBSCOT RIVER AT VEAZIE
PBS	PENOBSCOT RIVER AT STOCKTON SPRINGS
PRU	PRESUMPSCOT RIVER AT WINDHAM
PRW	PRESUMPSCOT RIVER AT WESTBROOK
PRP	PRESUMPSCOT RIVER AT PORTLAND
SCB	SACO BAY AT SCARBOROUGH
SLF	SALMON FALLS RIVER AT SOUTH BERWICK
SJR1	ST JOHN RIVER AT FRENCHVILLE
SJR3	ST JOHN RIVER AT MADAWASKA
SBW	W BR SEBASTICOOK RIVER AT PALMYRA

SPECIES

BNT	BROWN TROUT
BUL	BROWN BULHEAD
LOB	LOBSTER
SMB	SMALLMOUTH BASS
WSU	WHITE SUCKER

Dioxin and furan concentrations (pg/g) in fish and shellfish samples, 1994						
FISH						
Field ID	ARR-SMB-COMP-01	ARR-SMB-COMP-02	ARR-SMB-COMP-03	ARR-SMB-COMP-04	ARR-SMB-COMP-05	ARR-WHS-COMP-01
Extract ID	33932	33933	33846	33847	33848	33934
MS File	C20V19.RPT	C20V110.RPT	B10V38.RPT	B10V310.RPT	B10V311.RPT	C20V111.RPT
Isomer						
2378TCDF	2.03	14.1	12.2	10.3	8.78	35.3
2378TCDD	2.66	4.29	4.35	4.19	3.67	3.49
12378PECDF	0.55	0.975	0.938	0.733	0.605	12.9
23478PECDF	0.718	1.67	2.24	1.7	1.35	5.37
12378PECDD	ND(.454 cdl)	0.375	0.444	ND(.329 cdl)	ND(.51 cdl)	0.51
123478HXCDF	ND(.317 cdl)	ND(.456 cdl)	ND(.351 cdl)	ND(.296 cdl)	ND(.458 cdl)	12.4
123678HXCDF	ND(4.45 mpc)	ND(1.19 mpc)	ND(.351 cdl)	ND(.296 cdl)	ND(.458 cdl)	ND(6.23 mpc)
234678HXCDF	ND(.317 cdl)	ND(.456 cdl)	ND(.351 cdl)	ND(.296 cdl)	ND(.458 cdl)	1.32
123789HXCDF	ND(.317 cdl)	ND(.456 cdl)	ND(.351 cdl)	ND(.296 cdl)	ND(.458 cdl)	ND(1.98 mpc)
123478HXCDD	ND(.274 cdl)	ND(.379 cdl)	ND(.402 cdl)	ND(.355 cdl)	ND(.505 cdl)	ND(.373 cdl)
123678HXCDD	ND(.274 cdl)	ND(.379 cdl)	ND(.402 cdl)	ND(.355 cdl)	ND(.505 cdl)	0.647
123789HXCDD	ND(.274 cdl)	ND(.379 cdl)	ND(.402 cdl)	ND(.355 cdl)	ND(.505 cdl)	ND(.373 cdl)
1234678HPCDF	ND(12.9 mpc)	ND(1.47 mpc)	ND(.353 cdl)	ND(.309 cdl)	ND(.456 cdl)	15.7
1234789HPCDF	ND(.332 cdl)	ND(.499 cdl)	ND(.353 cdl)	ND(.309 cdl)	ND(.456 cdl)	3.9
1234678HPCDD	ND(.307 cdl)	ND(.377 cdl)	ND(.342 cdl)	ND(.31 cdl)	ND(.45 cdl)	2.09
123467890CDF	ND(.847 cdl)	ND(.966 cdl)	ND(.625 cdl)	ND(.582 cdl)	ND(.893 cdl)	9.99
123467890CDD	ND(.847 cdl)	ND(.966 cdl)	0.766	0.656	0.925	3.43
TCDF	3.66	15.2	12.4	10.7	9.01	50.7
TCDD	2.66	4.29	4.35	4.19	3.67	3.71
PECDF	1.27	3.05	3.17	2.43	1.96	38.4
PECDD	ND(.454 cdl)	ND(.309 cdl)	0.444	ND(.329 cdl)	ND(.51 cdl)	ND(.304 cdl)
HXCDF	0.483	ND(.456 cdl)	ND(.351 cdl)	ND(.296 cdl)	ND(.458 cdl)	26.1
HXCDD	ND(.274 cdl)	ND(.379 cdl)	ND(.402 cdl)	ND(.355 cdl)	ND(.505 cdl)	ND(.373 cdl)
HPCDF	ND(.332 cdl)	ND(.499 cdl)	ND(.353 cdl)	ND(.309 cdl)	ND(.456 cdl)	24.6
HPCDD	ND(.307 cdl)	ND(.377 cdl)	ND(.342 cdl)	ND(.31 cdl)	ND(.45 cdl)	3.3
% Lipid	0.88	2.62	2.08	2.8	2.25	5.32
I-TE (min)(c)	3.25	6.77	6.96	6.11	5.25	12.26
I-TE (max)(d)	4.23	7.17	7.23	6.51	5.86	13.16

ARR-WHS-COMP-02 33852 B11V15.RPT	ARJ-SMB-COMP-01* 33925 C22V210.RPT	ARJ-SMB-COMP-02 33924 C22V29.RPT	ARJ-SMB-COMP-03 33834 B09V0215.RPT	ARJ-SMB-COMP-04 33835 B10V11.RPT	ARJ-SMB-COMP-05 33836 B10V12.RPT	ARJ-WHS-COMP-01* 33923 C22V28.RPT
45.1	1.65	5.06	3.37	0.696	3.87	66.8
4.62	0.814	2.13	3.05	0.822	1.24	6.29
1.31	ND(.387 cdl)	0.61	0.419	ND(.43 cdl)	ND(.409 cdl)	2.23
2.1	ND(.387 cdl)	1.2	1.24	ND(.43 cdl)	0.563	3.16
0.444	ND(.366 cdl)	ND(.394 cdl)	ND(.362 cdl)	ND(.405 cdl)	ND(.356 cdl)	0.653
0.322	ND(.819)	ND(.249 cdl)	ND(.314 cdl)	ND(.333 cdl)	ND(.334 cdl)	ND(.78 mpc)
ND(.288 cdl)	ND(1.74 mpc)	ND(1.7 mpc)	ND(.314 cdl)	ND(.333 cdl)	ND(.334 cdl)	ND(5.61 mpc)
ND(.288 cdl)	ND(.727)	ND(.249 cdl)	ND(.314 cdl)	ND(.333 cdl)	ND(.334 cdl)	ND(.399 cdl)
ND(.288 cdl)	ND(1.07)	ND(.249 cdl)	ND(.314 cdl)	ND(.333 cdl)	ND(.334 cdl)	ND(.399 cdl)
ND(.315 cdl)	ND(.4 cdl)	ND(.315 cdl)	ND(.383 cdl)	ND(.403 cdl)	ND(.376 cdl)	ND(.318 cdl)
0.517	ND(.4 cdl)	ND(.315 cdl)	ND(.383 cdl)	ND(.403 cdl)	ND(.376 cdl)	0.843
ND(.315 cdl)	ND(.4 cdl)	ND(.315 cdl)	ND(.383 cdl)	ND(.403 cdl)	ND(.376 cdl)	ND(.318 cdl)
ND(.286 cdl)	ND(3.76 mpc)	ND(3.84 mpc)	ND(.308 cdl)	ND(.333 cdl)	ND(.324 cdl)	ND(13.4 mpc)
ND(.286 cdl)	ND(.377 cdl)	ND(.374 cdl)	ND(.308 cdl)	ND(.333 cdl)	ND(.324 cdl)	ND(.484 cdl)
0.422	ND(.096 cdl)	ND(.185 cdl)	ND(.303 cdl)	ND(.325 cdl)	ND(.304 cdl)	0.582
ND(.516 cdl)	ND(.254 cdl)	ND(.41 cdl)	ND(.592 cdl)	ND(.623 cdl)	ND(.584 cdl)	ND(.777 cdl)
0.867	ND(.397 mpc)	0.521	0.712	0.761	0.689	1.41
47.1	2.13	5.78	3.46	0.696	3.96	72
4.71	0.814	2.13	3.05	0.822	1.24	6.44
3.86	ND(.387 cdl)	1.82	1.66	ND(.43 cdl)	0.56	7.13
0.444	ND(.366 cdl)	ND(.394 cdl)	ND(.362 cdl)	ND(.405 cdl)	ND(.356 cdl)	ND(.505 cdl)
0.323	ND(.823)	ND(.249 cdl)	ND(.314 cdl)	ND(.333 cdl)	ND(.334 cdl)	0.625
0.581	ND(.4 cdl)	ND(.315 cdl)	ND(.383 cdl)	ND(.403 cdl)	ND(.376 cdl)	ND(.318 cdl)
ND(.286 cdl)	ND(.377 cdl)	ND(.374 cdl)	ND(.308 cdl)	ND(.333 cdl)	ND(.324 cdl)	ND(.484 cdl)
0.422	ND(.096 cdl)	ND(.185 cdl)	ND(.303 cdl)	ND(.325 cdl)	ND(.304 cdl)	0.582
6.71	0.64	1.55	1.46	0.5	1.43	8.02
10.56	0.97	3.27	4.03	0.89	1.91	15.08
10.71	1.97	3.85	4.46	1.6	2.36	16

ARJ-WHS-COMP-02 33837 B10V13.RPT	ARLV-SMB-COMP-01 33929 C22V211.RPT	ARLV-SMB-COMP-02 33930 C23V12.RPT	ARLV-SMB-COMP-03 33842 B10V34.RPT	ARLV-SMB-COMP-04 33843 B10V35.RPT	ARLV-SMB-COMP-05 33844 B10V36.RPT	ARLV-WHS-COMP-01 33931 C23V21.RPT
36.7	0.641	1.46	0.789	0.777	0.475	18.5
3.08	0.531	2.65	0.752	2.22	0.779	2.4
ND(1.29 mpc)	ND(.403 cdl)	0.417	ND(.378 cdl)	ND(.458 cdl)	ND(.364 cdl)	0.937
2.29	ND(.403 cdl)	0.785	ND(.378 cdl)	0.677	ND(.364 cdl)	1.42
ND(.531 cdl)	ND(.356 cdl)	ND(.418 cdl)	ND(.299 cdl)	ND(.383 cdl)	ND(.307 cdl)	ND(.474 cdl)
ND(.534 cdl)	ND(.486)	ND(.286 cdl)	ND(.349 cdl)	ND(.353 cdl)	ND(.349 cdl)	ND(.379 cdl)
ND(.534 cdl)	ND(.994 mpc)	ND(2.6 mpc)	ND(.349 cdl)	ND(.353 cdl)	ND(.349 cdl)	ND(1.29 mpc)
ND(.534 cdl)	ND(.549 mpc)	ND(.288 mpc)	ND(.349 cdl)	ND(.353 cdl)	ND(.349 cdl)	ND(.379 cdl)
ND(.534 cdl)	ND(.632)	ND(.286 cdl)	ND(.349 cdl)	ND(.353 cdl)	ND(.349 cdl)	ND(.379 cdl)
ND(.584 cdl)	ND(.374 cdl)	ND(.371 cdl)	ND(.366 cdl)	ND(.39 cdl)	ND(.399 cdl)	ND(.345 cdl)
ND(.584 cdl)	ND(.374 cdl)	ND(.371 cdl)	ND(.366 cdl)	ND(.39 cdl)	ND(.399 cdl)	ND(.345 cdl)
ND(.584 cdl)	ND(.374 cdl)	ND(.371 cdl)	ND(.366 cdl)	ND(.39 cdl)	ND(.399 cdl)	ND(.345 cdl)
ND(.504 cdl)	ND(2.05 mpc)	ND(4.47 mpc)	ND(.347 cdl)	ND(.35 cdl)	ND(.363 cdl)	ND(2.19 mpc)
ND(.504 cdl)	ND(.332 cdl)	ND(.57)	ND(.347 cdl)	ND(.35 cdl)	ND(.363 cdl)	ND(.431 cdl)
ND(.48 cdl)	ND(.0954 cdl)	ND(.0854 cdl)	ND(.323 cdl)	ND(.338 cdl)	ND(.333 cdl)	0.447
ND(.932 cdl)	ND(.277 cdl)	ND(.226 cdl)	ND(.629 cdl)	ND(.671 cdl)	ND(.622 cdl)	ND(.897 cdl)
1.31	0.314	0.353	0.694	0.705	0.711	0.996
39.1	0.87	2.07	0.789	0.777	0.475	20.6
3.2	0.531	2.65	0.752	2.22	0.779	2.57
2.28	ND(.403 cdl)	1.69	ND(.378 cdl)	0.674	ND(.364 cdl)	3.07
ND(.531 cdl)	ND(.356 cdl)	ND(.418 cdl)	ND(.299 cdl)	ND(.383 cdl)	ND(.307 cdl)	ND(.474 cdl)
ND(.534 cdl)	ND(.488)	ND(.286 cdl)	ND(.349 cdl)	ND(.353 cdl)	ND(.349 cdl)	ND(.379 cdl)
0.594	ND(.374 cdl)	ND(.371 cdl)	ND(.366 cdl)	ND(.39 cdl)	ND(.399 cdl)	ND(.345 cdl)
ND(.504 cdl)	ND(.332 cdl)	ND(.518)	ND(.347 cdl)	ND(.35 cdl)	ND(.363 cdl)	ND(.431 cdl)
ND(.48 cdl)	ND(.0954 cdl)	ND(.0854 cdl)	ND(.323 cdl)	ND(.338 cdl)	ND(.333 cdl)	0.447
5.3	0.43	0.36	0.48	0.44	0.23	3.9
7.9	0.59	3.21	0.83	2.64	0.83	5.01
8.63	1.4	3.93	1.45	3.12	1.45	5.62

ARLV-WHS-COMP-02 33845 B10V37.RPT	ARG-SMB-COMP-01 33920 C20V13.RPT	ARG-SMB-COMP-02 33921 C20V14.RPT	ARG-SMB-COMP-03 33830 B09V0211.RPT	ARG-SMB-COMP-04 33831 B09V0212.RPT	ARG-SMB-COMP-05 33832 B09V0213.RPT	ARG-BUL-COMP-01 33919 C20V12.RPT
19.5	5.47	8.72	4.01	2.38	2.4	4.07
1.94	1.97	1.8	1.17	1.11	0.658	1.67
0.798	0.727	0.443	ND(.405 cdl)	ND(.428 cdl)	ND(.377 cdl)	1.08
1.4	0.734	0.649	0.537	ND(.428 cdl)	ND(.377 cdl)	1.46
ND(.281 cdl)	ND(.411 cdl)	ND(.311 cdl)	ND(.371 cdl)	ND(.419 cdl)	ND(.354 cdl)	0.328
ND(.327 cdl)	0.588	ND(.455 cdl)	ND(.361 cdl)	ND(.368 cdl)	ND(.363 cdl)	ND(.548 mpc)
ND(.327 cdl)	ND(4.96 mpc)	ND(2.41 mpc)	ND(.361 cdl)	ND(.368 cdl)	ND(.363 cdl)	ND(2.93 mpc)
ND(.327 cdl)	ND(.388 cdl)	ND(.455 cdl)	ND(.361 cdl)	ND(.368 cdl)	ND(.363 cdl)	ND(.229 mpc)
ND(.327 cdl)	ND(.388 cdl)	ND(.455 cdl)	ND(.361 cdl)	ND(.368 cdl)	ND(.363 cdl)	ND(.189 cdl)
ND(.355 cdl)	ND(.375 cdl)	ND(.368 cdl)	ND(.416 cdl)	ND(.402 cdl)	ND(.424 cdl)	ND(.305 cdl)
0.363	ND(.375 cdl)	ND(.368 cdl)	ND(.416 cdl)	ND(.402 cdl)	ND(.424 cdl)	1.09
ND(.355 cdl)	ND(.375 cdl)	ND(.368 cdl)	ND(.416 cdl)	ND(.402 cdl)	ND(.424 cdl)	ND(.305 cdl)
ND(.312 cdl)	ND(14.9 mpc)	ND(4.74 mpc)	ND(.344 cdl)	ND(.361 cdl)	ND(.344 cdl)	ND(24.8 mpc)
ND(.312 cdl)	ND(.369 cdl)	ND(.473 cdl)	ND(.344 cdl)	ND(.361 cdl)	ND(.344 cdl)	ND(.381 cdl)
0.399	ND(.254 cdl)	ND(.344 cdl)	ND(.349 cdl)	ND(.363 cdl)	ND(.348 cdl)	0.611
ND(.599 cdl)	ND(.578 cdl)	ND(.871 cdl)	ND(.648 cdl)	ND(.709 cdl)	ND(.638 cdl)	ND(.295 cdl)
1.37	ND(.578 cdl)	ND(.871 cdl)	0.822	0.758	0.963	1.52
21.1	6.84	9.74	4.01	2.38	2.48	5.02
2.03	1.97	1.8	1.17	1.11	0.658	1.67
2.52	2.51	1.09	0.534	ND(.428 cdl)	ND(.377 cdl)	3.59
ND(.281 cdl)	ND(.411 cdl)	ND(.311 cdl)	ND(.371 cdl)	ND(.419 cdl)	ND(.354 cdl)	ND(.319 cdl)
ND(.327 cdl)	1.12	ND(.455 cdl)	ND(.361 cdl)	ND(.368 cdl)	ND(.363 cdl)	ND(.189 cdl)
0.409	ND(.375 cdl)	ND(.368 cdl)	ND(.416 cdl)	ND(.402 cdl)	ND(.424 cdl)	ND(.305 cdl)
ND(.312 cdl)	ND(.369 cdl)	ND(.473 cdl)	ND(.344 cdl)	ND(.361 cdl)	ND(.344 cdl)	0.382
0.399	ND(.254 cdl)	ND(.344 cdl)	ND(.349 cdl)	ND(.363 cdl)	ND(.348 cdl)	0.611
4.17	1.48	1.48	1.09	0.71	0.95	1.92
4.67	2.98	3.02	1.84	1.35	0.9	3.15
5.02	4.03	3.72	2.33	2.07	1.57	3.85

ARG-BUL-COMP-02 33829 B09V0210.RPT	ARG-WHS-COMP-01 33922 C20V15.RPT	ARG-WHS-COMP-02 33833 B09V0214.RPT	ARLS-SMB-COMP-01 33926 C20V16.RPT	ARLS-SMB-COMP-02 33927 C20V17.RPT	ARLS-SMB-COMP-03 33838 B10V21.RPT	ARLS-SMB-COMP-04 33839 B10V31.RPT
1.49	23.1	17.4	0.703	1.5	1.39	0.827
0.876	2.04	1.25	0.524	0.556	0.578	0.556
ND(.304 cdl)	1.25	0.506	ND(.35 cdl)	ND(.342 cdl)	ND(.457 cdl)	ND(.448 cdl)
0.721	1.55	1.14	ND(.35 cdl)	ND(.342 cdl)	ND(.457 cdl)	ND(.448 cdl)
ND(.254 cdl)	ND(.405 cdl)	ND(.333 cdl)	ND(.304 cdl)	ND(.317 cdl)	ND(.445 cdl)	ND(.416 cdl)
ND(.307 cdl)	ND(1.23 mpc)	ND(.329 cdl)	0.356	ND(.381 mpc)	ND(.406 cdl)	ND(.366 cdl)
ND(.307 cdl)	ND(8.53 mpc)	ND(.329 cdl)	ND(4.85 mpc)	ND(4.52 mpc)	ND(.406 cdl)	ND(.366 cdl)
ND(.307 cdl)	ND(.279)	ND(.329 cdl)	ND(.332 cdl)	ND(.246 cdl)	ND(.406 cdl)	ND(.366 cdl)
ND(.307 cdl)	ND(.408)	ND(.329 cdl)	ND(.332 cdl)	ND(.246 cdl)	ND(.406 cdl)	ND(.366 cdl)
ND(.336 cdl)	ND(.364 cdl)	ND(.352 cdl)	ND(.298 cdl)	ND(.301 cdl)	ND(.44 cdl)	ND(.383 cdl)
ND(.336 cdl)	ND(.802 mpc)	0.46	ND(.298 cdl)	ND(.301 cdl)	ND(.44 cdl)	ND(.383 cdl)
ND(.336 cdl)	ND(.364 cdl)	ND(.352 cdl)	ND(.298 cdl)	ND(.301 cdl)	ND(.44 cdl)	ND(.383 cdl)
ND(.292 cdl)	ND(26.8 mpc)	0.353	ND(17.7 mpc)	ND(15.5 mpc)	ND(.375 cdl)	ND(.365 cdl)
ND(.292 cdl)	ND(.301 cdl)	ND(.322 cdl)	ND(1.3 mpc)	ND(.544 mpc)	ND(.375 cdl)	ND(.365 cdl)
ND(.269 cdl)	0.67	0.511	0.342	ND(.183 cdl)	ND(.363 cdl)	ND(.364 cdl)
ND(.49 cdl)	ND(.375 cdl)	ND(.588 cdl)	ND(.575 cdl)	ND(.376 cdl)	ND(.718 cdl)	ND(.749 cdl)
0.95	2.95	2.39	0.664	ND(.516 mpc)	0.787	0.811
1.49	25.7	18.1	1.2	1.98	1.39	0.827
0.876	2.13	1.25	0.524	0.556	0.578	0.556
0.717	3.54	1.65	0.753	0.574	ND(.457 cdl)	ND(.448 cdl)
ND(.254 cdl)	ND(.405 cdl)	ND(.333 cdl)	ND(.304 cdl)	ND(.317 cdl)	ND(.445 cdl)	ND(.416 cdl)
ND(.307 cdl)	0.741	ND(.329 cdl)	0.357	0.339	ND(.406 cdl)	ND(.366 cdl)
ND(.336 cdl)	ND(.364 cdl)	0.517	ND(.298 cdl)	ND(.301 cdl)	ND(.44 cdl)	ND(.383 cdl)
ND(.292 cdl)	ND(.301 cdl)	0.402	ND(.689 cdl)	ND(.404 cdl)	ND(.375 cdl)	ND(.365 cdl)
ND(.269 cdl)	0.848	0.511	0.342	ND(.183 cdl)	ND(.363 cdl)	ND(.364 cdl)
0.94	2.72	2	0.39	0.6	0.79	0.36
1.39	5.2	3.64	0.64	0.71	0.72	0.64
1.76	6.87	4.01	1.81	1.85	1.5	1.37

ARLS-SMB-COMP-05 33840 B10V32.RPT	ARLS-WHS-COMP-01 33928 C20V18.RPT	ARLS-WHS-COMP-02 33841 B10V33.RPT	KRF-BNT-01 33938 C23V34.RPT	KRF-BNT-02 33957 C23V35.RPT	KRF-BNT-03 33869 B11V125.RPT	KRF-BNT-04 33870 B11V126.RPT
1.88	24.9	27.9	3.4	2.75	3.28	2.46
1.01	2.51	2.25	2.45	1.89	2.02	2.05
ND(.406 cdl)	ND(1.14 mpc)	0.496	ND(.494 cdl)	ND(1.46 mpc)	ND(.424 cdl)	ND(.396 cdl)
ND(.406 cdl)	1.3	1.24	ND(.494 cdl)	ND(1.11 cdl)	ND(.424 cdl)	ND(.396 cdl)
ND(.343 cdl)	ND(.5 mpc)	0.369	ND(.423 cdl)	ND(1.28 cdl)	ND(.501 cdl)	ND(.495 cdl)
ND(.364 cdl)	ND(.426 cdl)	ND(.366 cdl)	ND(.397 cdl)	ND(1.25 mpc)	ND(.347 cdl)	ND(.319 cdl)
ND(.364 cdl)	ND(.426 cdl)	ND(.366 cdl)	ND(1.1 mpc)	ND(11.7 mpc)	ND(.347 cdl)	ND(.319 cdl)
ND(.364 cdl)	ND(.691 mpc)	ND(.366 cdl)	ND(.397 cdl)	ND(.269)	ND(.347 cdl)	ND(.319 cdl)
ND(.364 cdl)	ND(.426 cdl)	ND(.366 cdl)	ND(.397 cdl)	ND(.394)	ND(.347 cdl)	ND(.319 cdl)
ND(.39 cdl)	ND(.386 cdl)	ND(.4 cdl)	ND(.329 cdl)	ND(.197 mpc)	ND(.429 cdl)	ND(.393 cdl)
ND(.39 cdl)	ND(.793 mpc)	0.624	ND(.329 cdl)	ND(.366 mpc)	ND(.429 cdl)	ND(.393 cdl)
ND(.39 cdl)	ND(.386 cdl)	ND(.4 cdl)	ND(.329 cdl)	ND(.314)	ND(.429 cdl)	ND(.393 cdl)
ND(.349 cdl)	ND(.247 cdl)	ND(.358 cdl)	ND(1.78 mpc)	ND(51.4 mpc)	ND(.334 cdl)	ND(.3 cdl)
ND(.349 cdl)	ND(.247 cdl)	ND(.358 cdl)	ND(.444 cdl)	ND(1.72 mpc)	ND(.334 cdl)	ND(.3 cdl)
ND(.342 cdl)	0.833	0.777	ND(.305 cdl)	ND(.479 mpc)	ND(.32 cdl)	ND(.314 cdl)
ND(.632 cdl)	0.405	ND(.64 cdl)	ND(.619 cdl)	ND(2.11 cdl)	ND(.587 cdl)	ND(.513 cdl)
0.73	3.52	1.86	ND(.619 cdl)	ND(3.71)	1.14	0.789
1.88	28.8	29.4	3.86	8.12	3.63	2.69
1.01	2.7	2.25	2.77	2.89	2.2	2.14
ND(.406 cdl)	3.19	1.73	ND(.494 cdl)	4.04	ND(.424 cdl)	ND(.396 cdl)
ND(.343 cdl)	ND(.385 cdl)	0.369	ND(.423 cdl)	ND(1.28 cdl)	ND(.501 cdl)	ND(.495 cdl)
ND(.364 cdl)	ND(.426 cdl)	0.484	ND(.397 cdl)	2.28	ND(.347 cdl)	ND(.319 cdl)
ND(.39 cdl)	ND(.386 cdl)	0.702	ND(.329 cdl)	ND(.306)	ND(.429 cdl)	ND(.393 cdl)
ND(.349 cdl)	ND(.247 cdl)	ND(.358 cdl)	ND(.444 cdl)	ND(1.57)	ND(.334 cdl)	ND(.3 cdl)
ND(.342 cdl)	1.06	0.777	ND(.305 cdl)	ND(.787)	ND(.32 cdl)	ND(.314 cdl)
0.77	4.09	4.83	3.81	3.36	3.42	3.13
1.2	5.66	5.94	2.79	2.16	2.35	2.3
1.87	6.32	6.18	3.63	5.42	3.11	3.02

KRF-BNT-05 33871 B15V073.RPT	KRF-SMB-COMP-01 33958 C23V36.RPT	KRF-SMB-COMP-02 33859 B11V113.RPT	KRF-SMB-COMP-03 33860 B11V114.RPT	KRF-SMB-COMP-04 33861 B11V115.RPT	KRF-SMB-COMP-05 33862 B11V118.RPT	KRF-WHS-COMP-01 33959 C23V37.RPT
3.01	1.28	1.33	1.53	1.72	2.59	7.73
2.59	0.803	0.652	0.786	0.946	1.47	2.54
ND(.415 cdl)	ND(.322 cdl)	ND(.468 cdl)	ND(.424 cdl)	ND(.484 cdl)	ND(.445 cdl)	ND(.67 cdl)
ND(.415 cdl)	ND(.322 cdl)	ND(.468 cdl)	ND(.424 cdl)	ND(.484 cdl)	ND(.445 cdl)	ND(.67 cdl)
ND(.384 cdl)	ND(.307 cdl)	ND(.472 cdl)	ND(.425 cdl)	ND(.492 cdl)	ND(.474 cdl)	ND(.573 cdl)
ND(.351 cdl)	ND(.336 cdl)	ND(.332 cdl)	ND(.319 cdl)	ND(.352 cdl)	ND(.28 cdl)	ND(.554 mpc)
ND(.351 cdl)	ND(.662 mpc)	ND(.332 cdl)	ND(.319 cdl)	ND(.352 cdl)	ND(.28 cdl)	ND(1.9 mpc)
ND(.351 cdl)	ND(.336 cdl)	ND(.332 cdl)	ND(.319 cdl)	ND(.352 cdl)	ND(.28 cdl)	ND(.68 mpc)
ND(.351 cdl)	ND(.336 cdl)	ND(.332 cdl)	ND(.319 cdl)	ND(.352 cdl)	ND(.28 cdl)	ND(.444)
ND(.347 cdl)	ND(.293 cdl)	ND(.392 cdl)	ND(.375 cdl)	ND(.407 cdl)	ND(.343 cdl)	ND(.222 cdl)
ND(.347 cdl)	ND(.293 cdl)	ND(.392 cdl)	ND(.375 cdl)	ND(.407 cdl)	ND(.343 cdl)	ND(.222 cdl)
ND(.347 cdl)	ND(.293 cdl)	ND(.392 cdl)	ND(.375 cdl)	ND(.407 cdl)	ND(.343 cdl)	ND(.222 cdl)
ND(.376 cdl)	ND(.878 mpc)	ND(.319 cdl)	ND(.328 cdl)	ND(.333 cdl)	ND(.276 cdl)	ND(2.85 mpc)
ND(.376 cdl)	ND(.338 cdl)	ND(.319 cdl)	ND(.328 cdl)	ND(.333 cdl)	ND(.276 cdl)	ND(.269 cdl)
ND(.387 cdl)	ND(.233 cdl)	ND(.324 cdl)	ND(.336 cdl)	ND(.351 cdl)	0.315	ND(.271 mpc)
ND(.789 cdl)	ND(.637 cdl)	ND(.585 cdl)	ND(.592 cdl)	ND(.656 cdl)	ND(.555 cdl)	ND(.973 cdl)
ND(.789 cdl)	ND(.637 cdl)	1.8	0.987	1.11	1.82	ND(.973 cdl)
3.27	1.78	1.33	1.62	1.72	2.78	10.4
2.75	0.803	0.652	0.786	0.946	1.47	3.94
ND(.415 cdl)	ND(.322 cdl)	ND(.468 cdl)	ND(.424 cdl)	ND(.484 cdl)	ND(.445 cdl)	1.13
ND(.384 cdl)	ND(.307 cdl)	ND(.472 cdl)	ND(.425 cdl)	ND(.492 cdl)	ND(.474 cdl)	ND(.573 cdl)
ND(.351 cdl)	ND(.336 cdl)	ND(.332 cdl)	ND(.319 cdl)	ND(.352 cdl)	ND(.28 cdl)	ND(.343)
ND(.347 cdl)	ND(.293 cdl)	ND(.392 cdl)	ND(.375 cdl)	ND(.407 cdl)	ND(.343 cdl)	ND(.222 cdl)
ND(.376 cdl)	ND(.338 cdl)	ND(.319 cdl)	ND(.328 cdl)	ND(.333 cdl)	ND(.276 cdl)	ND(.269 cdl)
ND(.387 cdl)	ND(.233 cdl)	ND(.324 cdl)	ND(.336 cdl)	ND(.351 cdl)	0.315	ND(.244 cdl)
4.11	1.37	1.93	1.58	1.8	2.89	8.49
2.89	0.93	0.79	0.94	1.12	1.73	3.32
3.57	1.53	1.54	1.64	1.91	2.44	4.43

KRF-WHS-COMP-02 33863 B11V119.RPT	KRS-SMB-COMP-01 33960 C23V38.RPT	KRS-SMB-COMP-02 33961 C23V39.RPT	KRS-SMB-COMP-03 33864 B11V120.RPT	KRS-SMB-COMP-04 33865 B11V121.RPT	KRS-SMB-COMP-05 33866 B11V122.RPT	KRS-WHS-COMP-01 33962 C24V21.RPT
6.59	0.669	0.787	0.331	0.464	0.43	6.4
1.77	0.405	0.487	0.322	0.254	0.271	1.86
ND(.46 cdl)	ND(.376 cdl)	ND(.516 cdl)	ND(.565 cdl)	ND(.516 cdl)	ND(.464 cdl)	ND(.475 cdl)
ND(.46 cdl)	ND(.376 cdl)	ND(.516 cdl)	ND(.565 cdl)	ND(.516 cdl)	ND(.464 cdl)	ND(.475 cdl)
ND(.502 cdl)	ND(.323 cdl)	ND(.444 cdl)	ND(.6 cdl)	ND(.572 cdl)	ND(.486 cdl)	ND(.433 cdl)
ND(.301 cdl)	ND(.472 cdl)	ND(.231 cdl)	ND(.337 cdl)	ND(.316 cdl)	ND(.304 cdl)	ND(.863)
ND(.301 cdl)	ND(2.1 mpc)	ND(2.05 mpc)	ND(.337 cdl)	ND(.316 cdl)	ND(.304 cdl)	ND(2.5 mpc)
ND(.301 cdl)	ND(.472 cdl)	ND(.231 cdl)	ND(.337 cdl)	ND(.316 cdl)	ND(.304 cdl)	ND(.766)
ND(.301 cdl)	ND(.472 cdl)	ND(.231 cdl)	ND(.337 cdl)	ND(.316 cdl)	ND(.304 cdl)	ND(1.12)
ND(.38 cdl)	ND(.399 cdl)	ND(.235 cdl)	ND(.408 cdl)	ND(.424 cdl)	ND(.357 cdl)	ND(.338 cdl)
ND(.38 cdl)	ND(.399 cdl)	ND(.235 cdl)	ND(.408 cdl)	ND(.424 cdl)	ND(.357 cdl)	ND(.338 cdl)
ND(.38 cdl)	ND(.399 cdl)	ND(.235 cdl)	ND(.408 cdl)	ND(.424 cdl)	ND(.357 cdl)	ND(.338 cdl)
ND(.304 cdl)	ND(3.27 mpc)	ND(5.79 mpc)	ND(.348 cdl)	ND(.359 cdl)	ND(.315 cdl)	ND(3.92 mpc)
ND(.304 cdl)	ND(.472 cdl)	ND(.358 cdl)	ND(.348 cdl)	ND(.359 cdl)	ND(.315 cdl)	ND(.24 cdl)
0.641	ND(.237 cdl)	ND(.254 cdl)	ND(.363 cdl)	ND(.358 cdl)	ND(.315 cdl)	0.401
ND(.51 cdl)	ND(.519 cdl)	ND(.88 cdl)	ND(.654 cdl)	ND(.661 cdl)	ND(.556 cdl)	ND(.315 cdl)
2.47	ND(.519 cdl)	ND(.88 cdl)	1.34	0.87	0.989	0.547
7.55	1.08	1.09	0.331	0.464	0.43	8.46
2.04	0.405	0.487	0.322	0.254	0.271	2.54
ND(.46 cdl)	ND(.376 cdl)	ND(.516 cdl)	ND(.565 cdl)	ND(.516 cdl)	ND(.464 cdl)	0.485
ND(.502 cdl)	ND(.323 cdl)	ND(.444 cdl)	ND(.6 cdl)	ND(.572 cdl)	ND(.486 cdl)	ND(.433 cdl)
ND(.301 cdl)	ND(.472 cdl)	ND(.231 cdl)	ND(.337 cdl)	ND(.316 cdl)	ND(.304 cdl)	ND(.867)
ND(.38 cdl)	ND(.399 cdl)	ND(.235 cdl)	ND(.408 cdl)	ND(.424 cdl)	ND(.357 cdl)	ND(.338 cdl)
ND(.304 cdl)	ND(.472 cdl)	ND(.358 cdl)	ND(.348 cdl)	ND(.359 cdl)	ND(.315 cdl)	ND(.24 cdl)
0.965	ND(.237 cdl)	ND(.254 cdl)	ND(.363 cdl)	ND(.358 cdl)	ND(.315 cdl)	0.401
6.99	0.75	0.91	0.87	0.68	0.61	6.21
2.44	0.47	0.56	0.36	0.3	0.31	2.51
3.18	1.35	1.48	1.24	1.14	1.05	3.66

KRS-WHS-COMP-02 33867 B11V123.RPT	KRA-SMB-01 33935 C23V31.RPT	KRA-SMB-02 33936 C23V32.RPT	KRA-SMB-03 33853 B11V16.RPT	KRA-SMB-04 33854 B11V17.RPT	KRA-WHS-COMP-01 33937 C23V33.RPT	KRA-WHS-COMP-02 33855 B11V19.RPT
9.21	2.22	2.7	1.16	0.738	16.8	11.5
2.65	1.33	1.32	0.744	0.633	2.7	1.98
ND(.449 cdl)	ND(3.12 mpc)	ND(2 mpc)	ND(.514 cdl)	ND(.684 cdl)	ND(14.1 mpc)	ND(.531 cdl)
ND(.449 cdl)	ND(.647 mpc)	0.577	ND(.514 cdl)	ND(.684 cdl)	ND(2.94 mpc)	0.85
ND(.501 cdl)	ND(.315 cdl)	ND(.483 cdl)	ND(.468 cdl)	ND(.635 cdl)	ND(.71 cdl)	ND(.489 cdl)
ND(.283 cdl)	0.722	ND(1.13 mpc)	ND(.369 cdl)	ND(.471 cdl)	ND(.245 cdl)	ND(.342 cdl)
ND(.283 cdl)	ND(40.1 mpc)	ND(17.1 mpc)	ND(.369 cdl)	ND(.471 cdl)	ND(.342) est	ND(.342 cdl)
ND(.283 cdl)	ND(.453 mpc)	ND(.328 mpc)	ND(.369 cdl)	ND(.471 cdl)	ND(2.03 mpc)	ND(.342 cdl)
ND(.283 cdl)	ND(.431 cdl)	ND(.182 cdl)	ND(.369 cdl)	ND(.471 cdl)	ND(.518 mpc)	ND(.342 cdl)
ND(.331 cdl)	ND(.372 cdl)	ND(.247 cdl)	ND(.403 cdl)	ND(.537 cdl)	ND(.578)	ND(.372 cdl)
ND(.331 cdl)	ND(.372 cdl)	ND(.256 mpc)	ND(.403 cdl)	ND(.537 cdl)	1.02	ND(.372 cdl)
ND(.331 cdl)	ND(.372 cdl)	ND(.247 cdl)	ND(.403 cdl)	ND(.537 cdl)	ND(.572)	ND(.372 cdl)
ND(.284 cdl)	ND(33.5 mpc)	ND(31.4 mpc)	ND(.371 cdl)	ND(.476 cdl)	ND(.359) est	ND(.359 cdl)
ND(.284 cdl)	ND(.47 mpc)	ND(.417 mpc)	ND(.371 cdl)	ND(.476 cdl)	ND(3.04 mpc)	ND(.359 cdl)
0.29	ND(.277 cdl)	ND(.142 cdl)	ND(.354 cdl)	ND(.447 cdl)	1.18	0.692
ND(.49 cdl)	ND(.585 cdl)	ND(.435 cdl)	ND(.621 cdl)	ND(.786 cdl)	ND(.863 mpc)	ND(.635 cdl)
0.696	ND(.585 cdl)	ND(.511 mpc)	0.786	0.969	1.88	1.81
11.4	5.24	6.03	1.16	0.738	25.8	12.9
3.25	1.41	1.46	0.744	0.633	3.56	2.19
ND(.449 cdl)	1.85	3.08	ND(.514 cdl)	ND(.684 cdl)	6.76	2.37
ND(.501 cdl)	ND(.315 cdl)	ND(.483 cdl)	ND(.468 cdl)	ND(.635 cdl)	ND(.71 cdl)	ND(.489 cdl)
ND(.283 cdl)	6.91	1.97	ND(.369 cdl)	ND(.471 cdl)	ND(.245 cdl)	1.03
ND(.331 cdl)	ND(.372 cdl)	ND(.247 cdl)	ND(.403 cdl)	ND(.537 cdl)	ND(.558)	0.408
ND(.284 cdl)	ND(.458 cdl)	ND(.405)	ND(.371 cdl)	ND(.476 cdl)	ND(.231 cdl)	ND(.359 cdl)
0.29	ND(.277 cdl)	ND(.142 cdl)	ND(.354 cdl)	ND(.447 cdl)	1.18	0.692
9.54	2.93	4.09	1.52	1.39	5.2	4.08
3.57	1.63	1.88	0.86	0.71	4.5	3.56
4.29	6.82	4.49	1.66	1.77	7.48	4.09

PBL-SMB-COMP-01 33963 C24V22.RPT	PBL-SMB-COMP-02 33964 C24V23.RPT	PBL-SMB-COMP-03 33856 B11V110.RPT	PBL-SMB-COMP-04 33857 B11V111.RPT	PBL-SMB-COMP-05 33858 B11V112.RPT	PBL-WHS-COMP-01 33868 B11V124.RPT	PBL-WHS-COMP-02 33965 C24V24.RPT
1.41	0.928	0.672	1.2	0.937	26.7	23.4
ND(.598 mpc)	0.369	0.198	0.334	0.383	2.25	2.22
ND(.723 cdl)	ND(.528 cdl)	ND(.668 cdl)	ND(.462 cdl)	ND(.434 cdl)	0.44	ND(1.72 mpc)
ND(.723 cdl)	ND(.528 cdl)	ND(.668 cdl)	ND(.462 cdl)	ND(.434 cdl)	0.803	0.915
ND(.695 cdl)	ND(.613 cdl)	ND(.621 cdl)	ND(.504 cdl)	ND(.419 cdl)	0.766	0.793
ND(.544 mpc)	ND(.301 mpc)	ND(.512 cdl)	ND(.307 cdl)	ND(.335 cdl)	ND(.299 cdl)	ND(.205 cdl)
ND(10.2 mpc)	ND(3.89 mpc)	ND(.512 cdl)	ND(.307 cdl)	ND(.335 cdl)	ND(.299 cdl)	ND(.299) est
ND(.429 mpc)	ND(.326 mpc)	ND(.512 cdl)	ND(.307 cdl)	ND(.335 cdl)	ND(.299 cdl)	ND(1.59 mpc)
ND(.211 cdl)	ND(.215 cdl)	ND(.512 cdl)	ND(.307 cdl)	ND(.335 cdl)	ND(.299 cdl)	ND(.951 mpc)
ND(.204 cdl)	ND(.249 cdl)	ND(.554 cdl)	ND(.352 cdl)	ND(.365 cdl)	ND(.391 cdl)	ND(.462)
ND(.204 cdl)	ND(.249 cdl)	ND(.554 cdl)	ND(.352 cdl)	ND(.365 cdl)	1.85	2.15
ND(.204 cdl)	ND(.249 cdl)	ND(.554 cdl)	ND(.352 cdl)	ND(.365 cdl)	ND(.391 cdl)	ND(.458)
ND(27.3 mpc)	ND(9.44 mpc)	ND(.487 cdl)	ND(.317 cdl)	ND(.31 cdl)	0.518	ND(.221)
ND(.256)	ND(.244 cdl)	ND(.487 cdl)	ND(.317 cdl)	ND(.31 cdl)	ND(.289 cdl)	ND(.266)
0.584	ND(.171 cdl)	ND(.467 cdl)	ND(.315 cdl)	ND(.308 cdl)	2.25	2.22
ND(1.09 cdl)	ND(.445 cdl)	ND(.82 cdl)	ND(.585 cdl)	ND(.532 cdl)	ND(.588 cdl)	ND(.906 mpc)
ND(1.09 cdl)	ND(.445 cdl)	ND(.82 cdl)	0.626	0.893	3.47	ND(2.84 mpc)
1.41	1.22	0.672	1.2	0.937	30.6	29.3
ND(.145 cdl)	0.548	0.198	0.334	0.383	4.09	7.14
ND(.723 cdl)	0.751	ND(.668 cdl)	ND(.462 cdl)	ND(.434 cdl)	5.76	9.82
ND(.695 cdl)	ND(.613 cdl)	ND(.621 cdl)	ND(.504 cdl)	ND(.419 cdl)	0.766	ND(.627 cdl)
0.321	ND(.215 cdl)	ND(.512 cdl)	ND(.307 cdl)	ND(.335 cdl)	3.34	3.09
ND(.204 cdl)	ND(.249 cdl)	ND(.554 cdl)	ND(.352 cdl)	ND(.365 cdl)	2.94	ND(.446)
ND(.233)	ND(.244 cdl)	ND(.487 cdl)	ND(.317 cdl)	ND(.31 cdl)	1.17	ND(.241)
0.584	ND(.171 cdl)	ND(.467 cdl)	ND(.315 cdl)	ND(.308 cdl)	2.8	2.53
1.21	0.96	0.98	1.07	1.03	8.56	8.94
0.14	0.46	0.27	0.45	0.48	5.94	5.65
2.97	1.7	1.33	1.2	1.18	6.14	6.12

PBV-SMB-COMP-01 33966 C21V22.RPT	PBV-SMB-COMP-02 33967 C21V23.RPT	PBV-SMB-COMP-03 33897 B15V077.RPT	PBV-SMB-COMP-04 33898 B16V12.RPT	PBV-SMB-COMP-05 33899 B15V078.RPT	PBV-WHS-COMP-01 33968 C21V24.RPT	PBV-WHS-COMP-02 33900 B16V032.RPT
ND(.597 mpc)	0.691	0.366	0.941	0.475	7.46	15.5
ND(.218 mpc)	0.228	0.168	0.298	0.209	0.553	0.677
ND(.7 cdl)	ND(.476 cdl)	ND(.453 cdl)	ND(.338 cdl)	ND(.334 cdl)	ND(.9 mpc)	16.2
ND(.7 cdl)	ND(.476 cdl)	ND(.453 cdl)	ND(.338 cdl)	ND(.334 cdl)	0.594	5.62
ND(.668 cdl)	ND(.489 cdl)	ND(.481 cdl)	ND(.285 cdl)	ND(.327 cdl)	ND(.504 cdl)	0.569
ND(.45 cdl)	ND(.887)	ND(.386 cdl)	ND(.298 cdl)	ND(.343 cdl)	ND(2.34 mpc)	16.3
ND(3.73 mpc)	ND(4.21 mpc)	ND(.386 cdl)	ND(.298 cdl)	ND(.343 cdl)	ND(14.9 mpc)	6.13
ND(.45 cdl)	ND(1.02 mpc)	ND(.386 cdl)	ND(.298 cdl)	ND(.343 cdl)	ND(.528 mpc)	1.98
ND(.463)	ND(1.15)	ND(.386 cdl)	ND(.298 cdl)	ND(.343 cdl)	ND(.27 cdl)	2.74
ND(.411 cdl)	ND(.377 cdl)	ND(.405 cdl)	ND(.339 cdl)	ND(.359 cdl)	ND(.365 cdl)	0.449
ND(.411 cdl)	ND(.377 cdl)	ND(.405 cdl)	ND(.339 cdl)	ND(.359 cdl)	ND(.754 mpc)	1.11
ND(.411 cdl)	ND(.377 cdl)	ND(.405 cdl)	ND(.339 cdl)	ND(.359 cdl)	ND(.365 cdl)	0.42
ND(7.9 mpc)	ND(7.79 mpc)	ND(.393 cdl)	ND(.302 cdl)	ND(.335 cdl)	ND(70.7 mpc)	19.4
ND(.807 mpc)	ND(1.76 mpc)	ND(.393 cdl)	ND(.302 cdl)	ND(.335 cdl)	ND(.383 mpc)	4.95
ND(.597 cdl)	ND(.132 mpc)	ND(.376 cdl)	ND(.306 cdl)	ND(.351 cdl)	1.5	4.35
ND(2.32 cdl)	ND(.327 cdl)	ND(.763 cdl)	ND(.639 cdl)	ND(.582 cdl)	ND(.543 cdl)	14.2
ND(2.32 cdl)	ND(.327 cdl)	1.23	ND(.639 cdl)	ND(.582 cdl)	2.08	6.68
0.13	0.982	0.366	0.941	0.475	12	29.9
ND(.131 cdl)	0.366	0.168	0.298	0.209	3.77	1.63
ND(.7 cdl)	ND(.476 cdl)	ND(.453 cdl)	ND(.338 cdl)	ND(.334 cdl)	2.47	53.5
ND(.668 cdl)	ND(.489 cdl)	ND(.481 cdl)	ND(.285 cdl)	ND(.327 cdl)	ND(.504 cdl)	2
ND(.45 cdl)	ND(.891)	ND(.386 cdl)	ND(.298 cdl)	ND(.343 cdl)	ND(.27 cdl)	42.4
ND(.411 cdl)	ND(.377 cdl)	ND(.405 cdl)	ND(.339 cdl)	ND(.359 cdl)	ND(.365 cdl)	5.69
ND(.666 cdl)	ND(.325 cdl)	ND(.393 cdl)	ND(.302 cdl)	ND(.335 cdl)	ND(.366 cdl)	31.7
ND(.597 cdl)	ND(.108 cdl)	ND(.376 cdl)	ND(.306 cdl)	ND(.351 cdl)	1.78	6.96
0.58	0.61	0.56	0.95	0.6	6.05	5.92
0	0.3	0.21	0.39	0.26	1.61	9.35
1.73	1.74	0.98	0.95	0.86	4.57	9.35

PRU-SMB-COMP-01 33969 C24V25.RPT	PRU-SMB-COMP-02 33970 C24V26.RPT	PRU-SMB-COMP-03 33901 B16V11.RPT	PRU-SMB-COMP-04 33902 B15V0711.RPT	PRU-SMB-COMP-05 33903 B15V0712.RPT	PRU-WHS-COMP-01 33973 C24V29.RPT	PRU-WHS-COMP-02 33904 B16V21.RPT
0.409	0.346	0.335	0.345	0.364	2.57	2.7
0.0886	ND(.0948 cdl)	ND(.0832)	ND(.0764 cdl)	ND(.0803 cdl)	0.177	0.217
0.472	ND(.425 cdl)	0.393	ND(.412 cdl)	ND(.368 cdl)	ND(.993 mpc)	0.427
ND(.428 cdl)	ND(.425 cdl)	ND(.358 cdl)	ND(.412 cdl)	ND(.368 cdl)	0.872	0.69
ND(.441 cdl)	ND(.449 cdl)	ND(.39 cdl)	ND(.382 cdl)	ND(.376 cdl)	0.847	0.857
ND(.43)	ND(.368 mpc)	ND(.313 cdl)	ND(.366 cdl)	ND(.396 cdl)	ND(.307 cdl)	ND(.34 cdl)
ND(5.23 mpc)	ND(5.21 mpc)	ND(.313 cdl)	ND(.366 cdl)	ND(.396 cdl)	ND(13.5 mpc)	ND(.34 cdl)
ND(.421 mpc)	ND(.484 mpc)	ND(.313 cdl)	ND(.366 cdl)	ND(.396 cdl)	ND(.591 mpc)	ND(.34 cdl)
ND(.559)	ND(.246 cdl)	ND(.313 cdl)	ND(.366 cdl)	ND(.396 cdl)	ND(.307 cdl)	ND(.34 cdl)
ND(.296 cdl)	ND(.263 cdl)	ND(.354 cdl)	ND(.365 cdl)	ND(.442 cdl)	0.509	ND(.421 mpc)(e)
ND(.296 cdl)	ND(.263 cdl)	ND(.354 cdl)	ND(.365 cdl)	ND(.442 cdl)	0.76	ND(.864 mpc)
ND(.296 cdl)	ND(.263 cdl)	ND(.354 cdl)	ND(.365 cdl)	ND(.442 cdl)	ND(.371 cdl)	ND(.409 cdl)
ND(17.2 mpc)	ND(14.1 mpc)	ND(.302 cdl)	ND(.372 cdl)	ND(.592 cdl)	ND(27.2 mpc)	ND(.329 cdl)
ND(.312 cdl)	ND(.288 cdl)	ND(.302 cdl)	ND(.372 cdl)	ND(.592 cdl)	ND(.205 cdl)	ND(.329 cdl)
ND(.249 mpc)	ND(.181 cdl)	ND(.329 cdl)	ND(.36 cdl)	ND(.446 cdl)	1.29	1.22
ND(.409 cdl)	ND(.424 cdl)	ND(.745 cdl)	ND(.812 cdl)	ND(.965 cdl)	ND(.227 cdl)	ND(.753 cdl)
ND(.409 cdl)	ND(.424 cdl)	ND(.745 cdl)	ND(.812 cdl)	ND(.965 cdl)	1.33	1.52
0.726	0.466	0.335	0.429	0.503	8.45	4.92
0.0886	ND(.0948 cdl)	ND(.0832)	ND(.0764 cdl)	ND(.0803 cdl)	0.747	0.217
0.469	ND(.425 cdl)	0.395	ND(.412 cdl)	ND(.368 cdl)	3.22	4.01
ND(.441 cdl)	ND(.449 cdl)	ND(.39 cdl)	ND(.382 cdl)	ND(.376 cdl)	ND(.314 cdl)	0.857
ND(.432)	0.396	ND(.313 cdl)	ND(.366 cdl)	ND(.396 cdl)	1.98	ND(.34 cdl)
ND(.296 cdl)	ND(.263 cdl)	ND(.354 cdl)	ND(.365 cdl)	ND(.442 cdl)	ND(.371 cdl)	0.601
ND(.312 cdl)	ND(.288 cdl)	ND(.302 cdl)	ND(.372 cdl)	ND(.592 cdl)	ND(.205 cdl)	ND(.329 cdl)
ND(.215 cdl)	ND(.181 cdl)	ND(.329 cdl)	ND(.36 cdl)	ND(.446 cdl)	1.29	1.62
1.76	1.44	1.24	1.28	1.54	9.19	6.87
0.15	0.03	0.05	0.03	0.04	1.43	1.3
1.52	1.45	0.75	0.8	0.82	3.27	1.61

PRW-SMB-01 33971 C24V27.RPT	PRW-SMB-02 33972 C24V28.RPT	PRW-SMB-03 33905 B16V31.RPT	PRW-SMB-05 33906 B16V32.RPT	PRW-SMB-06 33907 B16V33.RPT	PRW-WHS-COMP-01F 33982* C24V210.RPT	PRW-WHS-COMP-02 33908 B16V34.RPT
1.04	0.916	1.08	1.22	1.05	12	9.88
0.166	ND(.167 cdl)	0.201	0.209	0.154	0.888	0.883
ND(.423 cdl)	ND(.742 cdl)	ND(.513 cdl)	ND(.483 cdl)	ND(.378 cdl)	ND(1.59cdl)	1.13
ND(.423 cdl)	ND(.742 cdl)	ND(.513 cdl)	ND(.483 cdl)	ND(.378 cdl)	ND(1.59cdl)	0.468
ND(.37 cdl)	ND(.824 cdl)	ND(.422 cdl)	ND(.418 cdl)	ND(.357 cdl)	ND(1.39cdl)	ND(.419 cdl)
ND(.484 cdl)	ND(.746 cdl)	ND(.446 cdl)	ND(.436 cdl)	ND(.334 cdl)	ND(1.63cdl)	ND(.379 cdl)
ND(1.39 mpc)	ND(1.56 mpc)	ND(.446 cdl)	ND(.436 cdl)	ND(.334 cdl)	ND(.379) est	ND(.379 cdl)
ND(.484 cdl)	ND(.746 cdl)	ND(.446 cdl)	ND(.436 cdl)	ND(.334 cdl)	ND(1.63cdl)	ND(.379 cdl)
ND(.484 cdl)	ND(.746 cdl)	ND(.446 cdl)	ND(.436 cdl)	ND(.334 cdl)	ND(1.63cdl)	ND(.379 cdl)
ND(.388 cdl)	ND(.737 cdl)	ND(.413 cdl)	ND(.395 cdl)	ND(.335 cdl)	ND(1.47cdl)	ND(.381 cdl)
ND(.388 cdl)	ND(.737 cdl)	ND(.413 cdl)	ND(.395 cdl)	ND(.335 cdl)	ND(1.47cdl)	0.508
ND(.388 cdl)	ND(.737 cdl)	ND(.413 cdl)	ND(.395 cdl)	ND(.335 cdl)	ND(1.47cdl)	ND(.381 cdl)
ND(1.13 mpc)	ND(3.11 mpc)	ND(.51 cdl)	ND(.471 cdl)	ND(.371 cdl)	ND(.394)est	ND(.394 cdl)
ND(.431 cdl)	ND(.801 cdl)	ND(.51 cdl)	ND(.471 cdl)	ND(.371 cdl)	ND(1.72 cdl)	ND(.394 cdl)
ND(.228 cdl)	ND(.388 cdl)	ND(.424 cdl)	ND(.416 cdl)	ND(.333 cdl)	ND(1.72 cdl)	1.33
ND(.402 cdl)	ND(.694 cdl)	ND(.987 cdl)	ND(.882 cdl)	ND(.706 cdl)	ND(3.82cdl)	ND(.788 cdl)
ND(.402 cdl)	ND(.694 cdl)	ND(.987 cdl)	ND(.882 cdl)	ND(.706 cdl)	ND(3.82cdl)	2.88
1.16	0.916	1.08	1.22	1.05	13.8	10.8
0.166	ND(.167 cdl)	0.201	0.209	0.154	0.844	0.883
ND(.423 cdl)	ND(.742 cdl)	ND(.513 cdl)	ND(.483 cdl)	ND(.378 cdl)	54.3	1.6
ND(.37 cdl)	ND(.824 cdl)	ND(.422 cdl)	ND(.418 cdl)	ND(.357 cdl)	ND(1.38 cdl)	ND(.419 cdl)
ND(.484 cdl)	ND(.746 cdl)	ND(.446 cdl)	ND(.436 cdl)	ND(.334 cdl)	5.34	0.613
ND(.388 cdl)	ND(.737 cdl)	ND(.413 cdl)	ND(.395 cdl)	ND(.335 cdl)	ND(.46)	0.544
ND(.431 cdl)	ND(.801 cdl)	ND(.51 cdl)	ND(.471 cdl)	ND(.371 cdl)	ND(.168 cdl)	ND(.394 cdl)
ND(.228 cdl)	ND(.388 cdl)	ND(.424 cdl)	ND(.416 cdl)	ND(.333 cdl)	ND(1.34)	1.33
0.86	0.74	0.89	1.55	1.25	5.54	6.08
0.27	0.09	0.31	0.33	0.26	1.99	2.23
1.1	1.72	1.12	1.11	0.89	4.67	2.67

SBW-SMB-01R 34107 D21V23.RPT	SBW-SMB-02R 34108 D21V24.RPT	SBW-SMB-03 33909 B16V36.RPT	SBW-SMB-04 33910 B16V37.RPT	SBW-SMB-05 33911 B16V310.RPT	SBW-WHS-COMP-01R 33983* C21V25.RPT	SBW-WHS-COMP-02 33912 B16V311.RPT
0.197	0.12	0.278	0.255	0.289	1.51	1.65
0.368	0.299	0.403	0.354	ND(.398 mpc)	1.02	1.44
ND(2.48mpc)	ND(1.83mpc)	ND(.37 cdl)	ND(.33 cdl)	ND(.427 cdl)	ND(5.31 mpc)	ND(.365 cdl)
0.456	ND(.329mpc)	ND(.37 cdl)	ND(.33 cdl)	ND(.427 cdl)	1.16	1.03
ND(.387cdl)	ND(.332mpc)	ND(.365 cdl)	ND(.362 cdl)	ND(.434 cdl)	0.749	1.08
ND(5.47mpc)	ND(6.09mpc)	ND(.364 cdl)	ND(.366 cdl)	ND(.393 cdl)	ND(0.689) est	0.689
ND(0.35)est	ND(0.35)est	ND(.364 cdl)	ND(.366 cdl)	ND(.393 cdl)	ND(0.701) est	0.701
ND(.357cdl)	ND(.434mpc)	ND(.364 cdl)	ND(.366 cdl)	ND(.393 cdl)	ND(0.594mpc)	1.25
ND(.357cdl)	ND(.434mpc)	ND(.364 cdl)	ND(.366 cdl)	ND(.393 cdl)	ND(.338 mpc)	ND(.343 cdl)
ND(.322cdl)	ND(.361mpc)	ND(.399 cdl)	ND(.394 cdl)	ND(.4 cdl)	1.52	2.61
0.485	ND(.361mpc)	0.618	ND(.394 cdl)	0.784	5.12	12.2
ND(.322cdl)	ND(.361mpc)	ND(.399 cdl)	ND(.394 cdl)	ND(.4 cdl)	0.467	0.932
ND(0.35)est	ND(0.35)est	0.387	ND(.336 cdl)	0.478	ND(5.72) est	5.72
ND(.312cdl)	ND(.471mpc)	ND(.378 cdl)	ND(.336 cdl)	ND(.378 cdl)	ND(.416 cdl)	0.395
0.37	ND(.52mpc)	0.479	ND(.314 cdl)	0.713	12	30.7
ND(1.02cdl)	ND(1.27mpc)	ND(.726 cdl)	ND(.643 cdl)	ND(.713 cdl)	2.41	7.74
ND(1.02cdl)	ND(1.27mpc)	1.84	1.24	1.55	30.1	81.8
		0.617	0.446	0.521	11.8	3.46
		0.403	0.354	ND(.0909 cdl)	2.79	2.53
		ND(.37 cdl)	0.346	1.04	39.6	10.4
		ND(.365 cdl)	ND(.362 cdl)	ND(.434 cdl)	ND(.53 cdl)	2.43
		0.855	0.678	1.79	20.3	32.5
		0.662	ND(.394 cdl)	0.839	ND(.454 cdl)	23.5
		0.947	0.576	1.59	6.36	21.3
		0.479	ND(.314 cdl)	0.713	17.4	40.8
1.08	0.58	1.28	1.1	1.52	3.13	3.37
0.67	0.31	0.5	0.38	0.12	2.99	4.96
1.71	1.59	1.12	1.02	1.21	3.55	5.01

SJR1-WHS-01R 34102 D20V0215.RPT	SJR1-WHS-02 33913 B16V312.RPT	SJR3-BKT-COMP-01 33986* C27V12.RPT	SJR3-WHS-01R 34103 D21V11.RPT	SJR3-WHS-02 33914 B16V313.RPT	SLF-SMB-02 34104 D21V12.RPT	SLF-SMB-03R 34105 D21V21.RPT
0.327	0.221	0.568	0.379	0.342	ND(.301mpc)	ND(.602cdl)
0.189	ND(.0896 cdl)	ND(.27 cdl)	ND(.124cdl)	ND(.0903 cdl)	0.333	0.735
0.749	ND(.392 cdl)	ND(1.43 cdl)	ND(.435cdl)	ND(.375 cdl)	ND(1cdl)	ND(5.13 mpc)
ND(.445cdl)	ND(.392 cdl)	ND(1.43 cdl)	ND(.435cdl)	ND(.375 cdl)	ND(cdl1)	ND(2.69cdl)
ND(.394cdl)	ND(.374 cdl)	ND(1.4 cdl)	ND(.448cdl)	ND(.364 cdl)	ND(.935cdl)	ND(2.98 cdl)
ND(2.03 mpc)	ND(.365 cdl)	ND(.577 cdl)	0.449	ND(.372 cdl)	ND(.899cdl)	2.54
ND(0.35)est	ND(.365 cdl)	ND(1.2 mpc)	ND(0.35)est	ND(.372 cdl)	ND(0.35)est	ND(0.35) est
ND(0.348cdl)	ND(.365 cdl)	ND(.577 cdl)	ND(0.255cdl)	ND(.372 cdl)	ND(.899cdl)	ND(1.94cdl)
ND(0.348cdl)	ND(.365 cdl)	ND(.577 cdl)	ND(0.255cdl)	ND(.372 cdl)	ND(.899cdl)	ND(1.94cdl)
ND(0.313cdl)	ND(.387 cdl)	ND(.572 cdl)	ND(0.222cdl)	ND(.401 cdl)	ND(.784cdl)	ND(.161 cdl)
0.703	ND(.387 cdl)	ND(.572 cdl)	ND(0.222cdl)	ND(.401 cdl)	ND(.784cdl)	ND(.161 mpc)
ND(0.313cdl)	ND(.387 cdl)	ND(.572 cdl)	ND(0.222cdl)	ND(.401 cdl)	ND(.784cdl)	ND(.161 cdl)
ND(0.35)est	ND(.359 cdl)	ND(1.61 mpc)	ND(0.35)est	ND(.359 cdl)	ND(0.35)est	ND(0.35) est
ND(0.413cdl)	ND(.359 cdl)	ND(.829 cdl)	ND(0.323cdl)	ND(.359 cdl)	ND(1.08cdl)	ND(2.3 cdl)
1.95	ND(.346 cdl)	ND(.807 cdl)	0.64	ND(.364 cdl)	ND(1.21cdl)	ND(3.06 cdl)
ND(1.19cdl)	ND(.646 cdl)	ND(2.62 cdl)	ND(1.5cdl)	ND(.652 cdl)	ND(4.22cdl)	ND(10.6 cdl)
5.84	1.03	ND(2.62 cdl)	2.41	ND(.652 cdl)	ND(4.22cdl)	ND(10.6 cdl)
	0.336	0.568		0.342		12.4
	ND(.0896 cdl)	ND(.27 cdl)		ND(.0903 cdl)		ND(.117 cdl)
	ND(.392 cdl)	ND(1.43 cdl)		ND(.375 cdl)		51.8
	ND(.374 cdl)	ND(1.4 cdl)		ND(.364 cdl)		ND(.72 cdl)
	ND(.365 cdl)	ND(.577 cdl)		ND(.372 cdl)		21
	ND(.387 cdl)	ND(.572 cdl)		ND(.401 cdl)		ND(.215 cdl)
	ND(.359 cdl)	ND(.829 cdl)		ND(.359 cdl)		1.02
	ND(.346 cdl)	ND(.807 cdl)		ND(.364 cdl)		ND(.277 cdl)
0.66	0.74	0.96	0.81	0.81	0.23	0.45
0.35	0.02	0.06	0.08	0.03	0.33	1
1.15	0.79	2.32	0.84	0.79	1.96	4.69

SLF-WHS-COMP-01R 34106 D21V22.RPT	SLF-WHS-COMP-02 33915 B16V314.RPT												
5.09	3.75												
2.6	1.66												
ND(17.3mpc)	0.542												
3.64	1.37												
1.17	0.79												
ND(14.9mpc)	ND(.351 cdl)												
ND(0.35)est	ND(.351 cdl)												
ND(.595mpc)	0.381												
ND(.334cdl)	ND(.351 cdl)												
0.858	0.536												
3.33	1.9												
ND(.343cdl)	ND(.373 cdl)												
ND(0.35)est	0.679												
ND(.531)	ND(.336 cdl)												
4.96	3.26												
1.3	0.856												
11.2	8.08												
	4.74												
	1.66												
	6												
	0.79												
	3.35												
	3.22												
	1.99												
	4.43												
5.23	4.19												
5.99	3.47												
8.52	3.62												

QA SAMPLES						
Field ID	ARR-SMB-COMP-03(b8 MS)	ARR-SMB-COMP-03(b8 MSD)	Method Blank b8	KRF-BNT-05 (b9 MS)	KRF-BNT-05 (b9 MSD)	Method Blank b9
Extract ID	33849	33850	33851	33872(f)	33873(f)	33874
MS File	B10V312.RPT	B11V14.RPT	B09V029.RPT	B15V074.RPT	B15V075.RPT	B11V13.RPT
Isomer						
2378TCDF	17.2	16.5	ND(.0693 cdl)	7.3	6.8	ND(.0767 cdl)
2378TCDD	8.76	7.67	ND(.0757 cdl)	6.9	6.19	ND(.078 cdl)
12378PECDF	25.5	24.5	ND(.345 cdl)	24.4	21.1	ND(.444 cdl)
23478PECDF	29.4	25.9	ND(.345 cdl)	23.3	21.5	ND(.444 cdl)
12378PECDD	24.2	22.5	ND(.365 cdl)	25.1	21.9	ND(.425 cdl)
123478HXCDF	25.7	24.3	ND(.367 cdl)	25.1	22.1	ND(.325 cdl)
123678HXCDF	23.9	23.7	ND(.367 cdl)	25.1	21.6	ND(.325 cdl)
234678HXCDF	23.8	22.3	ND(.367 cdl)	23.5	20.8	ND(.325 cdl)
123789HXCDF	25.7	23.6	ND(.367 cdl)	31.4	21.1	ND(.325 cdl)
123478HXCDD	30.1	26.7	ND(.404 cdl)	26.3	22.9	ND(.37 cdl)
123678HXCDD	26.7	25.1	ND(.404 cdl)	26.1	22.6	ND(.37 cdl)
123789HXCDD	27.8	24.8	ND(.404 cdl)	25.9	20.2	ND(.37 cdl)
1234678HPCDF	26.5	26.2	ND(.351 cdl)	24.4	21.6	ND(.357 cdl)
1234789HPCDF	26.3	25.2	ND(.351 cdl)	22.9	19.4	ND(.357 cdl)
1234678HPCDD	25.1	23.7	ND(.344 cdl)	24.5	21.9	ND(.341 cdl)
123467890CDF	49.2	48.5	ND(.688 cdl)	46.9	40.5	ND(.678 cdl)
123467890CDD	44.7	45.1	0.732	46.8	42	0.767
TCDF	17.5	16.6	ND(.0693 cdl)	7.67	7.15	ND(.0767 cdl)
TCDD	8.76	7.67	ND(.0757 cdl)	7.04	6.33	ND(.078 cdl)
PECDF	55.4	51	ND(.345 cdl)	48.3	43.1	ND(.444 cdl)
PECDD	24.2	22.5	ND(.365 cdl)	25.1	21.9	ND(.425 cdl)
HXCDF	98.7	93.7	ND(.367 cdl)	103	85.4	ND(.325 cdl)
HXCDD	84.2	76.4	ND(.404 cdl)	78.2	65.7	ND(.37 cdl)
HPCDF	52.8	51.5	ND(.351 cdl)	47.5	41.3	ND(.357 cdl)
HPCDD	25.1	23.7	ND(.344 cdl)	24.5	21.9	ND(.341 cdl)
% Lipid	2.27	2.47	1.74	3.67	3.6	3.09
I-TE-min	57.8	52.64	0	-	-	0
I-TE-max	57.8	52.64	0.73	-	-	0.8

PRW-SMB-04 (b10 MS) 33916(f) B16V315.RPT	PRW-SMB-04 (b10 MSD) 33917(f) B16V316.RPT	Method Blank b10 33918 B15V076.RPT	Method Blank b11 33941 C20V11.RPT	Method Blank b12 33976 C21V11.RPT	Method Blank b13 33997 C21V21.RPT	Method Blank b14 34013 C27V11.RPT
6.24	6.74	ND(.0839 cdl)(a)	ND(.487 mpc)	ND(.0838 cdl)	ND(.403)	ND(.114 cdl)
4.78	4.8	ND(.0908 cdl)	ND(.109 cdl)	ND(.0852 cdl)	ND(1.28)	ND(.096 cdl)
25.5	25.5	ND(.359 cdl)	ND(.433 cdl)	ND(.397 cdl)	ND(.821)	ND(.542 cdl)
26.3	24.6	ND(.359 cdl)	ND(.433 cdl)	ND(.397 cdl)	ND(.811)	ND(.542 cdl)
24.9	24.7	ND(.377 cdl)	ND(.413 cdl)	ND(.377 cdl)	ND(1.91)	ND(.465 cdl)
26.6	26.2	ND(.349 cdl)	ND(.32 cdl)	ND(.392 cdl)	ND(23.4 mpc)	ND(.509 cdl)
35.5	28.1	ND(.349 cdl)	ND(.676 mpc)	ND(.392 cdl)	ND(1220 mpc)	ND(.509 cdl)
26.1	24.9	ND(.349 cdl)	ND(.32 cdl)	ND(.392 cdl)	ND(4.71 mpc)	ND(.509 cdl)
27.1	29	ND(.349 cdl)	ND(.32 cdl)	ND(.392 cdl)	ND(.927 mpc)	ND(.509 cdl)
25.7	25.1	ND(.371 cdl)	ND(.33 cdl)	ND(.361 cdl)	ND(2.09)	ND(.427 cdl)
25.1	25.1	ND(.371 cdl)	ND(.33 cdl)	ND(.361 cdl)	ND(1.06 mpc)	ND(.427 cdl)
25.7	25.2	ND(.371 cdl)	ND(.33 cdl)	ND(.361 cdl)	ND(2.07)	ND(.427 cdl)
27.2	26.5	ND(.348 cdl)	ND(1.39 mpc)	ND(.458 cdl)	ND(943 mpc)	ND(.551 cdl)
27.4	24.6	ND(.348 cdl)	ND(.359 cdl)	ND(.458 cdl)	ND(9.71)	ND(.551 cdl)
24.9	24.8	ND(.338 cdl)	ND(.39 cdl)	ND(.418 cdl)	ND(4.91)	ND(.471 cdl)
51.8	51.9	ND(.62 cdl)	ND(1.14 cdl)	ND(1.09 cdl)	ND(17.7)	ND(1.08 cdl)
49	48.4	ND(.62 cdl)	ND(1.14 cdl)	ND(1.09 cdl)	ND(14)	ND(1.08 cdl)
6.39	7.02	ND(.0839 cdl)	ND(.102 cdl)	ND(.0838 cdl)	606	ND(.114 cdl)
4.78	4.8	ND(.0908 cdl)	ND(.109 cdl)	ND(.0852 cdl)	ND(1.28)	ND(.096 cdl)
52.3	51	ND(.359 cdl)	ND(.433 cdl)	ND(.397 cdl)	4900	ND(.542 cdl)
24.9	24.7	ND(.377 cdl)	ND(.413 cdl)	ND(.377 cdl)	ND(1.91)	ND(.465 cdl)
116	107	ND(.349 cdl)	0.326	ND(.392 cdl)	59.5	ND(.509 cdl)
76.5	75.5	ND(.371 cdl)	ND(.33 cdl)	ND(.361 cdl)	ND(2.01)	ND(.427 cdl)
54.6	51.4	ND(.348 cdl)	ND(.359 cdl)	ND(.458 cdl)	ND(8.82)	ND(.551 cdl)
24.9	24.8	ND(.338 cdl)	ND(.39 cdl)	ND(.418 cdl)	ND(4.91)	ND(.471 cdl)
1.75	2.13	2.17(b)				
-	-	0				
-	-	0.75				

Method Blank b15 34029 C28V28.RPT	Method Blank b17 34109 D20VQ212.RPT				
ND(.217 cdl)	ND(.0845 cdl)				
ND(.204 cdl)	ND(.0768 cdl)				
ND(.847 cdl)	ND(.374 cdl)				
ND(.847 cdl)	ND(.374 cdl)				
ND(1.02 cdl)	ND(.353 cdl)				
ND(1.11 cdl)	ND(.462 cdl)				
ND(1.11 cdl)	ND(.462 cdl)				
ND(1.11 cdl)	ND(.462 cdl)				
ND(1.11 cdl)	ND(.462 cdl)				
ND(.941 cdl)	ND(.391 cdl)				
ND(.941 cdl)	ND(.391 cdl)				
ND(.941 cdl)	ND(.391 cdl)				
ND(1.03 cdl)	ND(.52 cdl)				
ND(1.03 cdl)	ND(.52 cdl)				
ND(.929 cdl)	ND(.466 cdl)				
ND(2.24 cdl)	ND(1.07 cdl)				
ND(2.24 cdl)	ND(1.07 cdl)				
ND(.217 cdl)	ND(.0845 cdl)				
ND(.204 cdl)	ND(.0768 cdl)				
ND(.847 cdl)	ND(.374 cdl)				
ND(1.02 cdl)	ND(.353 cdl)				
ND(1.11 cdl)	ND(.462 cdl)				
ND(.941 cdl)	ND(.391 cdl)				
ND(1.03 cdl)	ND(.52 cdl)				
ND(.929 cdl)	ND(.466 cdl)				
-					
0					
2.04					

LOBSTER MEAT						
Field ID	BVB-1M	BVB-2M	KNB-1M	KNB-2M	MCH-1M	MCH-2M
Extract ID	33998	33999	34000	34001	34002	34003
MS File	C27V18.RPT	C27V19.RPT	C27V110.RPT	C28V12.RPT	C28V11.RPT	C28V21.RPT
Isomer						
2378TCDF	0.232	0.226	0.673	0.836	0.123	ND(.134 mpc)
2378TCDD	ND(.0775 cdl)	ND(.0836 cdl)	ND(.102 mpc)	ND(.123 mpc)	ND(.0629 cdl)	ND(.0745 cdl)
12378PECDF	ND(.52 cdl)	ND(.513 cdl)	ND(.39 cdl)	ND(.328 cdl)	ND(.258 cdl)	ND(.405 cdl)
23478PECDF	ND(.52 cdl)	ND(.513 cdl)	ND(.39 cdl)	ND(.328 cdl)	ND(.258 cdl)	ND(.405 cdl)
12378PECDD	ND(.444 cdl)	ND(.346 cdl)	ND(.384 cdl)	ND(.302 cdl)	ND(.265 cdl)	ND(.357 cdl)
123478HXCDF	ND(1.38)	ND(.934)	ND(.487 cdl)	ND(3.63)	ND(.603)	ND(.366 cdl)
123678HXCDF	ND(1.27)	ND(.86)	ND(.487 cdl)	ND(3.34)	ND(.555)	ND(.366 cdl)
234678HXCDF	ND(1.25 mpc)	ND(.829)	ND(.549 mpc)	ND(3.22)	ND(.926 mpc)	ND(.366 cdl)
123789HXCDF	ND(1.79)	ND(1.21)	ND(.487 cdl)	ND(4.71)	ND(.784)	ND(.366 cdl)
123478HXCDD	ND(.444 cdl)	ND(.375 cdl)	ND(.391 cdl)	ND(.472 cdl)	ND(.348 cdl)	ND(.325 cdl)
123678HXCDD	ND(.444 cdl)	ND(.375 cdl)	ND(.391 cdl)	ND(.472 cdl)	ND(.348 cdl)	ND(.325 cdl)
123789HXCDD	ND(.444 cdl)	ND(.375 cdl)	ND(.391 cdl)	ND(.472 cdl)	ND(.348 cdl)	ND(.325 cdl)
1234678HPCDF	ND(.734 cdl)	ND(.557 cdl)	ND(.564 cdl)	ND(.478 cdl)	ND(.428 cdl)	ND(.444 cdl)
1234789HPCDF	ND(.734 cdl)	ND(.557 cdl)	ND(.564 cdl)	ND(.478 cdl)	ND(.428 cdl)	ND(.444 cdl)
1234678HPCDD	ND(.283 cdl)	ND(.423 cdl)	ND(.455 cdl)	0.416	0.373	ND(.312 cdl)
123467890CDF	ND(.344 cdl)	ND(.909 cdl)	ND(.761 cdl)	ND(.108 cdl)	0.483	ND(.624 cdl)
123467890CDD	ND(.427 mpc)	ND(.909 cdl)	0.927	0.868	1.14	ND(.624 cdl)
TCDF	0.491	0.466	1.35	1.84	0.204	ND(.0854 cdl)
TCDD	ND(.0775 cdl)	ND(.0836 cdl)	0.0999	ND(.0765 cdl)	ND(.0629 cdl)	ND(.0745 cdl)
PECDF	ND(.52 cdl)	ND(.513 cdl)	ND(.39 cdl)	0.402	ND(.258 cdl)	ND(.405 cdl)
PECDD	ND(.444 cdl)	ND(.346 cdl)	ND(.384 cdl)	ND(.302 cdl)	ND(.265 cdl)	ND(.357 cdl)
HXCDF	ND(1.39)	ND(.938)	0.8	ND(3.64)	ND(.606)	ND(.366 cdl)
HXCDD	ND(.444 cdl)	ND(.375 cdl)	ND(.391 cdl)	ND(.472 cdl)	ND(.348 cdl)	ND(.325 cdl)
HPCDF	ND(.734 cdl)	ND(.557 cdl)	ND(.564 cdl)	1.38	1	ND(.444 cdl)
HPCDD	ND(.283 cdl)	ND(.423 cdl)	0.548	0.554	0.441	ND(.312 cdl)
% Lipid	0.24	0.18	0.22	0.32	0.2	0.17
I-TE-min	0.02	0.02	0.07	0.08	0.01	0
I-TE-max	1.32	1.07	0.91	2.19	0.76	0.38

PRP-1M 34004 C28V22.RPT	PRP-2M 34005 C28V23.RPT	SCO-1M 34006 C28V24.RPT	SCO-2M 34007 C28V25.RPT	PBS-1M 34008 C28V26.RPT	PBS-2M 34009 C28V27.RPT	
0.265	ND(.266 mpc)	0.246	0.221	0.368	0.746	
ND(.0677 cdl)	ND(.0951 cdl)	ND(.0803 cdl)	ND(.0801 cdl)	ND(.0826 cdl)	0.104	
ND(.356 cdl)	ND(.651 cdl)	ND(.405 cdl)	ND(.376 cdl)	ND(.495 cdl)	ND(.395 cdl)	
ND(.356 cdl)	ND(.651 cdl)	ND(.405 cdl)	ND(.376 cdl)	ND(.495 cdl)	ND(.395 cdl)	
ND(.325 cdl)	ND(.4 cdl)	ND(.404 cdl)	ND(.326 cdl)	ND(.49 cdl)	ND(.334 cdl)	
ND(.464 mpc)	ND(.867)	ND(.416 cdl)	ND(.372 cdl)	ND(.488 cdl)	ND(.412 cdl)	
ND(.384 mpc)	ND(.798)	ND(.427 mpc)	ND(.372 cdl)	ND(.526 mpc)	ND(.96 mpc)	
ND(.789 mpc)	ND(.705 mpc)	ND(.416 cdl)	ND(.372 cdl)	ND(.488 cdl)	ND(.412 cdl)	
ND(.215 mpc)	ND(1.13)	ND(.416 cdl)	ND(.372 cdl)	ND(.488 cdl)	ND(.412 cdl)	
ND(.369 cdl)	ND(.368 cdl)	ND(.38 cdl)	ND(.375 cdl)	ND(.427 cdl)	ND(.391 cdl)	
ND(.369 cdl)	ND(.368 cdl)	ND(.38 cdl)	ND(.375 cdl)	ND(.427 cdl)	0.527	
ND(.369 cdl)	ND(.368 cdl)	ND(.38 cdl)	ND(.375 cdl)	ND(.427 cdl)	ND(.391 cdl)	
ND(.395 cdl)	ND(.558 cdl)	ND(.628 cdl)	ND(.519 cdl)	0.701	ND(1.19 mpc)	
ND(.395 cdl)	ND(.558 cdl)	ND(.628 cdl)	ND(.519 cdl)	ND(.559 cdl)	ND(.483 cdl)	
0.619	ND(.527 mpc)	ND(.242 cdl)	ND(.275 cdl)	0.659	1.01	
ND(.158 cdl)	ND(.147 cdl)	ND(.48 cdl)	ND(.568 cdl)	ND(.643 cdl)	ND(.758 cdl)	
2.24	0.855	ND(.48 cdl)	ND(.568 cdl)	1.78	2.64	
0.595	0.333	0.604	0.348	0.664	1.84	
ND(.0677 cdl)	ND(.0951 cdl)	0.0957	ND(.0801 cdl)	0.292	0.733	
ND(.356 cdl)	ND(.651 cdl)	ND(.405 cdl)	ND(.376 cdl)	0.691	1.6	
ND(.325 cdl)	ND(.4 cdl)	ND(.404 cdl)	ND(.326 cdl)	ND(.49 cdl)	ND(.334 cdl)	
0.835	1.57	0.949	0.55	2.86	4.92	
ND(.369 cdl)	ND(.368 cdl)	ND(.38 cdl)	ND(.375 cdl)	ND(.427 cdl)	ND(.391 cdl)	
ND(.395 cdl)	ND(.558 cdl)	ND(.628 cdl)	ND(.519 cdl)	1.34	ND(.483 cdl)	
0.872	0.67	ND(.242 cdl)	ND(.275 cdl)	1.93	2.5	
0.18	0.27	0.29	0.22	0.19	0.27	
0.3	0	0.02	0.02	0.04	0.25	
0.76	1.16	0.82	0.75	0.98	0.95	

LOBSTER TOMALLEY						
BVB-1T 34016 C28V213.RPT	BVB-2T 34017 C28V214.RPT	KNB-1T 34018 C28V215.RPT	KNB-2T 34019 C28V216.RPT	MCH-1T 34020 C28V217.RPT	MCH-2T 34021 C29V11.RPT	PRP-1T 34022 C29V12.RPT
21.7	17.8	82.7	62.4	17.6	10.3	31.2
1.43	1.13	8.01	5.06	0.949	0.466	1.88
ND(6.89 mpc)	ND(4.83 mpc)	ND(12.1 mpc)	ND(9.48 mpc)	ND(5.26 mpc)	2.78	ND(10.5 mpc)
8.14	6.38	12.6	8.87	5.3	4.44	8.47
4.63	3.67	6.13	4.86	2.77	1.74	4.8
0.936	ND(1.05)	ND(.959 cdl)	ND(.906 cdl)	ND(1.65 mpc)	ND(1.16)	ND(1.85)
ND(11.6 mpc)	ND(8.24 mpc)	ND(17.1 mpc)	ND(19.9 mpc)	ND(6.16 mpc)	ND(2.37 mpc)	ND(16.7 mpc)
ND(1.86 mpc)	ND(2.38 mpc)	ND(4.19 mpc)	ND(.906 cdl)	ND(2.84 mpc)	ND(1.37 mpc)	ND(3.89 mpc)
ND(.926 cdl)	ND(1.18 mpc)	ND(2 mpc)	ND(3.6 mpc)	ND(1.09 cdl)	ND(1.51)	ND(2.4)
1.47	ND(.899 cdl)	ND(.984 cdl)	ND(1.09 cdl)	ND(1.03 cdl)	ND(.829 cdl)	ND(1.26 cdl)
5.17	4.01	11.3	9.5	3.04	1.61	10.3
1.35	1.49	3.51	3.81	ND(1.19 mpc)	ND(.949 mpc)	ND(4 mpc)
ND(9.29 mpc)	ND(3.62 mpc)	ND(9.89 mpc)	ND(.736 cdl)	ND(5.17 mpc)	ND(1.63 mpc)	ND(.877 cdl)
ND(1.14)	ND(.513 cdl)	ND(.586 cdl)	ND(.736 cdl)	ND(1.07 cdl)	ND(.671 cdl)	ND(.877 cdl)
5.26	3.44	11.8	9.8	7.83	11.2	25.9
ND(1.69 cdl)	ND(.55 cdl)	ND(.404 cdl)	ND(.272 cdl)	ND(1.37 cdl)	ND(.873 cdl)	ND(.653 cdl)
2.99	1.79	8.3	7.11	6.22	9.04	21.1
54.3	47.3	176	138	58.2	33	68.2
11.3	8.13	21.4	16.5	7.35	3.29	13
32.7	25.7	63.1	51.7	29.9	25.1	47.7
ND(.976 cdl)	ND(.712 cdl)	ND(.741 cdl)	ND(.791 cdl)	ND(.921 cdl)	ND(.92 cdl)	ND(1.17 cdl)
12.6	11.4	44.2	48.4	8.47	3.97	25
ND(.841 cdl)	ND(.899 cdl)	ND(.984 cdl)	ND(1.09 cdl)	ND(1.03 cdl)	ND(.829 cdl)	ND(1.26 cdl)
ND(1.03)	ND(.513 cdl)	ND(.586 cdl)	ND(.736 cdl)	ND(1.07 cdl)	ND(.671 cdl)	ND(.877 cdl)
11.3	6.21	16.4	13.4	15.4	20.4	34.8
15.55	18.47	17.64	13.09	16.31	23.19	12.18
10.95	8.52	27.25	19.6	7.13	5.01	12.95
12.84	10.18	30.48	22.73	8.85	5.85	16.5

PRP-2T 34023 C29V13.RPT	SCO-1T 34024 C29V14.RPT	SCO-2T 34025 C29V15.RPT	PBS-1T 34014 C28V29.RPT	PBS-2T 34015 C28V212.RPT		
39.1	23	20.6	37.6	ND(38.4 mpc)		
3.08	1.43	1.2	2.24	2.45		
ND(19.9 mpc)	ND(7.98 mpc)	ND(5.88 mpc)	ND(16.1 mpc)	ND(13.7 mpc)		
17.9	8.18	6.37	12.8	11.7		
6.95	4.17	3.18	8.23	7.81		
ND(1.12 mpc)	ND(1.27 mpc)	ND(1.06 cdl)	ND(1.56 mpc)	ND(1.3 mpc)		
ND(26.1 mpc)	ND(14.1 mpc)	ND(10.1 mpc)	ND(59.9 mpc)	ND(51.9 mpc)		
ND(2.49 mpc)	ND(1.42 mpc)	ND(1.61 mpc)	ND(2.95 mpc)	ND(2.74 mpc)		
ND(1.76 mpc)	ND(.944 cdl)	ND(1.06 cdl)	ND(1.23 mpc)	ND(.759 mpc)		
3.37	1.67	1.16	ND(.971 cdl)	ND(.966 cdl)		
11.8	5.65	3.7	25.8	28		
3.31	ND(2.19 mpc)	1.12	7.4	7.27		
ND(36.3 mpc)	ND(42.2 mpc)	ND(9.71 mpc)	ND(120 mpc)	ND(55.5 mpc)		
ND(3.49)	ND(.936 cdl)	ND(1.01 cdl)	ND(.75 cdl)	ND(1.07)		
24.8	6.36	4.69	31.2	37.1		
ND(2.08 cdl)	ND(1.38 cdl)	ND(1.39 cdl)	ND(.836 cdl)	ND(.818 cdl)		
29.9	3.16	5.96	19.2	34.1		
104	63.6	55	89.3	48.3		
18.4	9.14	5.64	40.3	31.2		
91.2	44.1	26.3	77.6	58.9		
ND(1.79 cdl)	ND(.937 cdl)	ND(.893 cdl)	ND(.891 cdl)	ND(.854 cdl)		
29.6	14.1	9.69	70.7	52		
ND(1.4 cdl)	ND(.925 cdl)	ND(.934 cdl)	ND(.971 cdl)	ND(.966 cdl)		
ND(3.17)	ND(.936 cdl)	ND(1.01 cdl)	0.79	ND(.97)		
40.5	10.5	10.1	52	55.3		
26.62	18.3	22.38	19.3	12.63		
21.54	10.71	8.68	20.17	16.1		
26.08	13.53	10.47	28.84	27		

APPENDIX 3

2378-TCDD AND 2378-TCDF IN SLUDGE FROM MAINE WASTEWATER TREATMENT PLANTS

APPENDIX 3. DIOXIN AND FURAN IN SLUDGE FROM MAINE WASTEWATER TREATMENT PLANTS (pg/g dry weight)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
AUGUSTA SANITARY DISTRICT	900409		<1.2	<1.3	<1.3
	900607		<3.9	2.5	<4.2
	900608		2.1	2.5	4.4
	900914		<20.0	E20.0	<22.0
	910108		<0.005	<0.005	<0.01
	910220		<1.9	0.79	<11.1
	910301		<1.9	4.8	<10.8
	920416		1.9	1.9	7
	920427		<1.0	1.9	6
	930223		<1.3	<1.3	7.5
	940215		<1.0	<1.0	5.8
			<0.02	0.02	0.04
			<0.23	1.8	1.1
ANSON-MADISON SANITARY DISTRICT	910408		<1.3	2.2	<1.5
	911001		1.7	4.6	2.2
BANGOR	950104		<2.14	<0.98	<3.2
	950104		<19.86	<26.41	<109
	950104		20.65	20.7	110
	950104		20.28	20.16	108
BERWICK SEWER DISTRICT	861111		<2.5	<4.0	<2.9
	890301	76.4	14	19.9	16.1
	890927	75.3	<12.1	<12.1	<13.4
	891208	87.5	1152	872	1240
BIDDEFORD	900208		7.2	30	34.6
	900208		39	310	128
	910501		<0.86	3.7	5.7
	910703		<0.57	<0.95	2.2
	920204		<1.5	2.9	<9.4
	930121		<2.4	<3.2	<9.2
	940209		<0.19	<0.48	1.1
	940913		<1.0	<2.9	7.9
BOISE CASCADE CORP RUMFORD	850621		32.0		
	880602		105.0	674.0	171
	890108	77.1	114	569	171
	890407	73.1	46.5	184	65.1
	890628	76.8	E9.91	134	E23.3
BREWER	920316		<1.0	6.1	<5.0
	920826			110	37.1
	920901		<6.0	110	<43.1
	921116		3.8	19	<10.7
	930202		<3.7	11	<18.0
	930511		1.2	9.8	9.2
	930810		4.1	24	11.1
	930826		4.1	25	<11.3
	940201		3.2	24	11.3

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
BREWER	940829		4.5	26	11.8
	941110		5.2	36	12.7
CORINNA SEWER DISTRICT	850506				10.3
	871117		11.9	<28.8	31.7
	880301		<3.0	8.5	<3.2
	890222		<13.0		<64.1
	890510		<5.0		<5.0
	900131		2.3	127	39.9
	900606		<4.0	85.4	34.3
	900919		<10.0	50	<15.3
	901024		<8.0	<0.8	<16.8
	910313		<5.0		40.4
	910514				13.9
	920304		<3.9	<8.4	31.8
	930405		<4.8	19.9	26.5
	930811		<9.9	68.6	63.5
	940308		<13.1	46	<62.1
	940810		<5.6	7.8	40.3
FRASER PAPER LTD	880903	68.3	13.9	233	37.2
MADAWASKA	890106	79.1	E23.4	204	E44
	890406	71.3	E3.83	12.9	5.2
	890930	80.1	5.02	E26.6	7.5
	940426		<0.1	0.8	0.9
GARDINER WATER DISTRICT	900918		<0.87	4.6	2.4
	910401		1.4	4.4	4.6
	911002		<0.54	5.1	6.2
	920404		<3.5	9.4	<6.4
	921116		0.9	6.4	4.8
	930407		<0.13	0.92	<0.8
	931115		<0.3	<3.3	10
	931115			<18	1.8
	931115		<0.9		<0.9
	940329		<0.2	<1.1	0.8
	941018		<1.2	<4.3	<3.8
GEORGIA PACIFIC CO					
MILLINOCKET	850618		<0.4		
	880602		<1.9	7.3	<2.6
WOODLAND	890113	75.8	<6.2	<3.55	<6.6
	890424	74.7	<0.63	<4.74	<5.5
	890718	66.0	<1.76	12.94	<38.1
	891217		0.94	3.2	2.4
GREAT NORTHERN PAPER CO	940317		<7.4	<8.9	<16.4
HARTLAND WASTEWATER	881007	65.0	<2.86	<1.71	<2.9
TREATMENT PLANT	881221	65.5	<7.25	E6.09	<7.8
	890312	64.3	<0.28	5.6	<0.8
	890627	63.3	<1.36	6.54	<1.9

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
HAWK RIDGE COMPOST	1989-90	mean n=6	6.6	15.9	8.2
UNITY	1991	(1.6-13)		mean n=4	6.6
(compost)	900420		2.9	15	6.6
	900507		3.4	6	7.6
	900702		5	40	12.7
	900817		3.4	31	12.8
	900820		3	30	10.4
	900820		5	40	12.6
	901010		<0.005	0.03	0.02
	910115		0.59	6.4	1.9
	910207		4	59.5	15.5
	910806		1.6	15	11.4
	920101		2.6	18	18.2
	920301				15
	920715		<2.0	34	29.2
	920818		<1.0	18	17.3
	921007		202	23	211
	930111		<2.2	12	14
	930406		1.7	16	10.8
	930629		1.7	22	12.4
	931213		3.4	28	14.1
	940101		2.6	27	11.3
	940422		<1.0	12	7.6
	940422		<1	9.1	9.8
	940725		1.6	13	8.1
	941117		<2.4	13	14.7
			4.9	33	3.3
INTERNATIONAL PAPER CO	850621		51.3W		
JAY	870115		190	760	266
	880218		24	130	39
	880219		23	121	34.1
	880223		14	75	21.5
	880225		57	250	82
	880226		15	79	22.9
	880227		13	79	20.9
	881231		16.6W	143W	30.9W
	890124		15W	77W	22.7W
	890126		28	112	39.2
	890214	ash		0.63	0.2
	890323		7.7W	42.6W	12.0W
	890417		24	150	39.0
	890714	ash	0.07	0.02	0.1
	890821		<0.68	<0.47	1.3
	891012	ash	0.14	<.02	<0.14
	891012		<0.51	<0.8	<0.8
	891231	ash	0.06	<0.62	<0.12
	891231		<0.96	<0.46	<1.1
	900205		<18.7	150	<33.7
	900402	ash	0.05	<0.02	0.05
	900420		<0.8	<0.8	3.7
	900420		<0.53	<?	<1.4

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
INTERNATIONAL PAPER CO	900501	ash	<0.71	0.03	<0.71
JAY	900501		<0.81	<0.78	2.6
	900501		<0.71	<0.42	2.4
	900614	ash	<0.60	0.36	<0.60
	900614		<0.6	<0.81	3.5
	900730		<6.1	1.1	<8
	900830		<0.46	<1.1	1.1
	901113		<1.5	<0.71	<2.2
	901201	ash	<2.4	0.12	<2.4
	901228		<2.4	<0.82	<5.2
	901228		<2.0	<2.9	5
	910117	ash	<3.9	0.15	<3.9
	910117		<2.4	<1.3	<8.2
	910219		<1.8	<0.74	<3.8
	910219		<2.0	56	<8.8
	910312		<2.0	2.2	<5.3
	910401		<0.44	<1.0	<1.1
	910411		<2.3	3.6	<6.7
	910701	ash	<0.44	<0.1	<1.1
	910701		<1.9	<1.9	10.2
	910801	ash	<0.44	<1.0	<0.03
	911001		<1.0	1.4	5.8
	911121	ash	<1.9	<1.9	<0.07
	920101		<1.0	1.5	5.9
	920129	ash	<1.0	0.14	<0.52
	920401		<1.6	3.5	9.1
	920520	ash	<1.0	0.15	<0.8
	920701		<2.2	<4.8	<4.9
	920708	ash	<1.6	0.35	<1.6
	921001		<1.7	<1.7	9.3
	921030	ash	<2.2	<4.8	<2.6
	930101		<0.9	2	5.2
	930113	ash	<1.7	<1.7	<1.8
	930401		<1.1	<1.1	6
	930602	ash	<0.9	0.22	<1.1
	930701		<1.5	<1.5	8.2
	930812	ash	<1.1	<1.1	<1.2
	931001		<0.93	1.3	5.1
	931104	ash	<1.5	<1.5	<1.6
	940401		<0.87	0.94	4.9
	940401		<1.0	<1.0	5.8
	940701		<1.0	1.7	5.8
JAMES RIVER CORP	880801		12.0	34.0	15.4
OLD TOWN	881225	78.6	301	963	398
	890423	78.7	380	1197	499
	890718	68.8	50.6	478	98.4
	950103		8.8	65	15.3
BERLIN, NH	88		104	2930	397

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
KENNEBEC SANITARY	870713				38.5
TREATMENT DISTRICT	871105				10.2
WATERVILLE	880118				7.2
	880322				5.4
	880518				18.1
	880921				3.6
	890711				42.2
	891011				106.9
	900410		E7.9	121	41.6
	900824		3.3	54.0	29.6
	901101		3.6	12	<20.1
	901221		3.5	6.7	<21.3
	901221		3.5	19	24.2
	910408		<2.3	<3.3	<15.0
	910606		<2.9	<5.0	<19.4
	910808		3.1	53	20.8
	910911		3.1	4.1	<12.2
	920226		2.6	20	12.3
	920708		<1.0	11	23.2
	930914		0.3	1.6	13.1
	931001		1.1	6.3	31.1
	941021		<1.0	8.2	15.8
LEWISTON-AUBURN	871231		<1.0	for year	(n=4)
TREATMENT PLANT	881031		0.04		
	900809		0.01	0.005	0.02
	910306		<7.3	<7.3	44
	920610		<79	4.5	<87.1
	930922		<0.003	<0.002	0.01
LINCOLN PULP & PAPER CO	881119		48W	223W	70.3W
LINCOLN	890123	80.9	1194	4759	1670
	890407	85.1	332	1470	479
	890831	83.5	250	1782	428
	921020	fly ash	0.8	16.8	6.6
	921020		<1.08	<1.063	2
	921208	fly ash	2.03	52.94	13.7
	930329	bottom as	<0.44	0.26	0.8
	930524	fly ash	23.1	396	170
	930525		24.09	402.81	157
	930713	fly ash	17	322	155
	930714		0.87	1.02	1.9
	930714		16.95	321.95	143
	930813	fly ash	4.7	124	43
	931011	fly ash	10	174	80
	931012		8.83	153.39	56.4
	931012		12.06	181.25	84.9
	931012		<0.48	<0.43	<0.8
	931014		9.05	187.47	76.9
	931123	fly ash	8.3	214	96.5
	931130		8.27	213.84	87.5
		bottom as	<1.1	<1.1	<2.3

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
OAKLAND TREATMENT PLANT	910304		<2.5	10	<3.5
	910329		<0.005	0.01	0.02
	920415		<1.0	<1.0	8.4
	930408		<1.0	<1.0	<6.6
	930501		<1.0	11	64.9
	940426		<1.0	<1.0	31.9
OLD TOWN	880528		<3.0	<3.0	<5.9
	900208			16.7	8.6
	910918		<2.9	6.6	24
	910918		<2.2		<2.2
ORONO TREATMENT PLANT	900316		2.1		
	900412		8.5		
	901001		3.5	9.2	9
	901021		3.9		
	910324		<2.1	9.5	14.6
	911019		16.1		
	920324		<0.6	7.6	12.3
	920328		9.42		
	920915		<0.5	5.4	2.8
	921015		1.13		
	930427		1.33		
	930430		<0.5	3.4	2.2
	940902		<0.6	2.5	2.1
PERC	910417		<2.0	9.9	9.6
PORTLAND WATER DISTRICT	861205				3.8
PORTLAND	870402				4.1
	871124				1.0
	880913				0.1
	891205		E1.2	11.3	5.8
	891205		1.6	14.5	7.9
	901001		<0.003	0.01	0.1
	901001		<0.003	0.02	0.01
	910828		<66	<140	<80.2
	920714		0.88	6.4	0.6
	930719		1.3	2.3	<13.1
	940718		<1.0	0.84	4
	940718		<1.0	1	4
WESTBROOK WWTF	861205				0.5
	870402				4.9
	871119				0.2
	891205		E1.6	14.5	4.9
	901001		<3.0	9	<5.5
	910826		<64	<32	<67.3
	920714		<1.1	7.6	3.7
	930719		<1.0	3.2	6.6

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
REGIONAL WASTE SYSTEMS PORTLAND	890111	ash	5.5	28	8.3
	890112	ash	6	24	8.4
	890113	ash	10	50	15
	890114	ash	10	20	12
	890121	ash	6	90	15
	900211	ash	E20	210	E41
ROBINSON MANUFACTURING OXFORD	870113		10.1	17.5	18.5
	880419		<0.4	<0.2	<0.4
	881004		<7.3	<9.6	<8.2
	890119		<0.39	<1.2	3.9
	890119D		<2.1	<1.1	<5.8
	910226		<3.0	<3.0	8.8
	910305		<3	<0.3	<8.0
	910308		<0.003	<0.003	<0.01
	910323		<0.005	<0.005	<0.01
	910323		<0.003	<0.003	<0.01
	920611		<1.2	<1.0	<3.9
SCOTT PAPER CO WINSLOW	871008		36		49.8
	871201		13.5		23.7
	880331		25	219	52.8
	880630		19	177	38.6
	880930		22	189	43.8
	881231		17	181	37.1
	890301	slash	9.7	89	20.3
	890331		18	177	38.5
	890401		14	8.9	15
	890401	slash	7.4	5.8	7.9
	890401	slash	9.5	6.3	10.1
	890630		14	89	25.1
	890630	slash	7.4	58	14.1
	890630	slash	9.5	63	17.5
	890930		11	67	17.7
	891001	slash	13	115	45.3
	891001	slash	7.2	68	45.3
	891001		12	86	26.4
	891001	slash	5.4	36	19.8
	900630		12	94	24.6
		slash	5.5	54	16.1
	900930		9.4	76	20.3
		slash	8.5	77	21.9
	910101		6.9	123	47.7
	910215	slash	3.3	36	8.2
	910215		8.4	53	15.8
	910215		<0.21	<0.33	<0.5
	910215		<0.27	<0.36	<0.9
	910215		2.8	1.2	4.3
	910215		7.2	63	15.7
	910215	slash	2.7	29	6.6
	910305	slash	6.9	123	47.7
	910330		8.3	10	20.5

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
SCOTT PAPER CO	910330	slash	6.9	12.3	47.1
WINSLOW	910630		4.6	6.2	13.4
	910630	slash	8.1	16.1	28.9
	910930		6.5	6.9	15
	910930	slash	<1.3	42.4	<10.3
	911202		6.3	68.1	14.6
	911202	slash	4.6	121	32.1
	911230		6.3	6.8	14.3
	920101		8.5	72.1	24.7
	920101	slash	9.4	153	42.4
	920224		5.9	54.2	20.4
	920224	slash	12.3	72.6	36.9
	920225	slash	9.4	153	42.4
	920225		6.5	72.1	14.7
	920320		1.2	17.8	3.8
	920401		5.2	55	12.7
	920401	slash	3.4	33	11.2
	920630		5.2	55	12.5
	920630	slash	3.4	33	11.2
	921006		5.1	60	21.9
	921006	slash	2.9	29	8.4
	921228		7.2	59	19.6
	921228	IWT	5.7	53	13.3
	921228	slash	4.7	55	17.8
	930317		4.7	50	13.6
	930317	slash	7.1	91	32.6
	930629		4.2	39	14
	930629	slash	3	35	11
	930922	slash	6.7	80	26.6
	930928		3.9	42	11.3
	930928	slash	6.7	80	29.1
	931001		5.2	50	12.8
	931001	slash	3.4	31	13.5
	940101		3.5	31	11.2
	940101	slash	2.6	27	11.3
	940401		3.7	27	10.9
	940401	slash	4.8	36	18.2
	940701		4.9	33	12.6
	940701	slash	3.7	31	13.3
SD WARREN CO	850711		<1.95	pulp mill sludge	
SKOWHEGAN			2.9	paper mill sludge	
	861217		<	47	5
	870519		13	21	15.2
	871201		60		60.1
	880325		27	88	39
	880628		33.0	106	43.6
			6.9	29	9.8
			39.0	149	53.9
		EPA	67.0	330	100
	881014		40	98	52.1
	881220		54	177	76.5

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
SD WARREN CO SKOWHEGAN	890303		54	91	65.6
	890629		23	53	26
	890926		<0.8	16	<2.6
	891207		18	52	26.4
	900316		<18	23	<25.1
	900622		35	73	52.1
	900921		45	86	68.8
	901231		39.5	115	57.8
	910331		23.1	50.5	31.8
	910630		39.4	146	66.5
	910917		69.9	260	105.9
	920331		41.2	90.4	<299
	920630		33	56	48.6
	920930		20	39	27.1
	921230		15	45	22.9
	930112		11	31	16.1
	930623		23	73	38
	930924		56	170	78.9
	931001		42	110	53
	940101		31	95	43.5
	940401		33	89	46
	940701		12	36	17.8
SD WARREN CO. WESTBROOK	850620		17.2		
	870929		31		31.1
	871231		21	135	34.7
	880331		5.6	21	7.7
	880401		8.7	3.9	14.9
	880630		13	55	18.5
	881207		19	127	34.2
			19	69	27.5
	890106		<1.8	31	<4.9
	890320		6.2	18	8.6
	890620		5.3	35	10.5
	890731		5	30	16
	890831		8	40	14.9
	890931		9	60	17.8
	891031		5	30	12.9
	891130		3	30	15.5
	891231		7	50	15.2
	900131		6	20	14.0
	900228		2.7	24.6	7.7
	900331		5.1	33.6	17.1
	900430		5.9	34.6	14.9
	900531		5.3	25.8	10.5
	900630		19.0	26.0	29.5
	900730		5.2	20.6	11.6
	900831		2.9	12.1	9.8
	900930		2.5	10	7
	901231		7.7	35.7	24.8

APPENDIX 3. (CONT.)

LOCATION	DATE	%MOIST	TCDD	TCDF	I-TE
SD WARREN CO.	910331		3.4	21.5	9.1
WESTBROOK	910630		2.9	19.6	8.4
	910930		3.8	14.2	5.2
	911231		2.4	25.1	8.2
	920331		1.2	19.4	3.8
	920505		1.6	10.8	5.4
	920821		<	24.5	2.8
	940131		0.9	11.6	2.9
	940324			12.3	2.0
	940728		2.1	17.3	5.1
	941213		5.3	29.2	46.9
S PORTLAND STP	890501		0	<0.01	<0.01
	900314		<5.3	3.5	<7.2
	900314		<2.7	<5.4	<7.8
	910508		0	<0.01	<0.01
	910531		<5	<0.001	<11.2
	920401		<1.0	<0.8	<5.9
	920428		<0.8	1.4	6
	920714		0.88	6.4	7.5
	930324		<2.8	<2.8	23
	930331		<2.8	<2.8	<19.3
	940315		<1.0	3.9	10.5
	?1005		8.65	48	30.4
STATLER TISSUE CO	880930	62.6	36.9	414	78.3
AUGUSTA	881223	61.4	37.6	326	70.2
	890403	61.6	34.6	242	58.8
	890628	65.5	17.7	414	59.1

I-TEs calculated from TEFs in Water Bureau rule chapter 567 and
nd= detection level
D=duplicate analysis

APPENDIX 4

2378-TCDD AND 2378-TCDF IN WASTEWATER

FROM MAINE PULP AND PAPER MILLS

APPENDIX 4. 2378-TCDD AND 2378-TCDF IN WASTEWATER FROM MAINE PULP AND PAPER MILLS

SOURCE	DATE	TCDD (pg/l)	TCDF (pg/l)
ANSON MADISON	920408	<3	<3
	921001	<3	20
BOISE CASCADE	880518	120	570
	890301	25	80
	890807	<6	20
	890810	<13	20
	890814	<5	13
	890817	<5	18
	890821	<8	21
	890824	<5	10
	890829	<5	18
	890831	<11	20
	890905	<11	20
	890907	<9	18
	891023	<3	7
	891026	<5	6
	891222	<5	20
	900216	<2	6
	900216	<1	7
	900515	<10	<8
	900515	<1	5
	900627	<3	8
	900627	<3	9
	920217	<4.6	14
	920221	<4.6	13
	920311	<4.6	9.9
	920316	3.2	8.7
		3.5	12
		4.6	17
	920326	4.5	8.5
	920412	6.3	24
	920613	<4.6	6.8
	920708	<4.6	<5.8
	920831	<4.6	3.5
	920904	<3.8	
	921104	<3.7	
	921201	<2.4	

SOURCE	DATE		TCDD (pg/l)	TCDF (pg/l)
BOISE CASCADE	930105		<2.4	
	930201		<2.4	<10
	930401		<2.8	<10
	930501		<2.4	<10
	930701		<3.9	12
	930801		<2.8	<3.4
	931001		<3.2	<10
	931101		<3.9	<3.6
	940130		<2.8	<5.2
	940219		<1.9	<1.3
	940417		<3.3	<2.4
	940509		<3.6	<1.2
	940728		<3.7	<1.7
	940829		<2.7	<2.0
	941024		<2.1	<1.1
	941205		<2.7	<1.8
GEORGIA PACIFIC (Woodland)	880101		6.8	25
	900316		<5	4
	900423		<3	<6
	900531		<8	<5
	900619		<3	<1
GEORGIA PACIFIC	900716		<1	<3
	900807		<2	<5
INTERNATIONAL PAPER	880101		88	420
	880715		30	150
	890307		30	100
			E6	E20
			E20	E20
	890310		16	74
	890616		<8	980
	890621		17	140
	890713		<16	50
	890720	DEP	30	150
	890818		20	110
	900413		<10	90
	910924		<10	60
	910926		<10	60
	911129		50	210
	911219		<20	<80

SOURCE	DATE	TCDD (pg/l)	TCDF (pg/l)
INTERNATIONAL PAPER	920125	20	110
	920126	20	110
	920127	30	100
	920128	30	100
	920129	13.7	49.9
	920312	19.3	65.6
	920320	14.8	73.9
	920423	< 13.9	59.1
	920610	< 5.7	29.5
	920617	< 6.3	30.8
	920723	< 8.4	33.6
	920819	6.6	29.7
	920923	< 2.6	< 2.0
	921111	< 6.1	22.4
	921202	< 2.6	< 14.4
	930125	5.4	19.6
	930222	< 5.3	25.5
	930420	< 2.0	16.7
	930527	4.3	10.3
	930716	< 5.2	28.9
	930826	< 5.3, < 6.5	21.5, 19.2
	930910	< 8.6	9.4
	931022		19.5
	931119	< 3.6	19.5
	931224	10.9	31.1
	940125	< 4.1	21.6
	940226	7.3	38
	940422	7.7	41.1
	940520	4.1	25.6
	940722	< 3.4	16.7
	940829	< 7.9	31.8
	941027	< 3.4	25.3
	941125	< 6.8	24.4

SOURCE	DATE	TCDD (pg/l)	TCDF (pg/l)
JAMES RIVER	880630	39	
	890131	27	120
	890222	210	340
	890223	92	290
	890224	77	340
	890320	<	34
	890324	<	24
	890325	36	73
	890405	30	110
	890410	17	52
	890411	32	89
	890824	32	94
	890831	13	150
	890911	<4.1	14
	890915	<3.3	<8.1
	890921	<5.7	13
	890927	<5.3	9.7
	891011	<3	11
	891019	<5.2	14
	891102	<6	18
	891106	6.7	22
	891114	<9.5	<7.1
	891127	<6.4	20
	891206	<8.4	13
	891213	<8.3	20
	891221	<4.7	23
	900105	<6.8	<8.3
	900111	<9	<8.5
	900118	<5.9	6.1
	900125	<6.7	10
	900207	<4.6	17
	900214	<6.6	23
	900222	<7.3	15
	900301	<6	11
	900308	<3	12
	900315	<4	16
	900329	<7.4	14
	900407	<7.2	24
	900502	<7	19
	900729	<9.9	49

SOURCE	DATE	TCDD (pg/l)	TCDF (pg/l)
JAMES RIVER	910330	17	70
	910430	19	65
	910530	9.5	41
	910630	6.8	43
	910830	11	66
	911030	<	7.9
	911130	<7.7	<16
	920330	<5.7	50
	920730	16	69
	920830	<4.9	23
	921030	<3.0	
	921230	4.8	
	930130	<5.0	14
	930330	<4.9	12
	930530	<4.2	11
	930630	<2.8	15
	930830	<1.6	9.2
	930930	<3.5	7.6
	931130	<3.1	32
	931230	<3.2	19
	940230	<4.8	7.7
	940330	<4.6	12
	940530	<1.5	<4.5
	940630	<3.5	9.2
	940830	<2.0	<4.8
	940930	<4.6	<6.8
	941130	<9.5	<10
	941230	<1.1	5.8
	950130	<2.4	8.2
LINCOLN PULP AND PAPER	881130	32	130
	920817	11.2	69.8
	920908	<11	27.3
	921117	7.7	39.1
	921216	<1.9	9.5
	931230	<5.5	<17.3
	940417	1.9	7.5

SOURCE	DATE	TCDD (pg/l)	TCDF (pg/l)
SD WARREN (Skowhegan)	880630	16,19	63,100
	900710	<7.1	8.4
	900716	<6.1	5.9
	dup	<5.5	<7.3
	900724	<3.6	<3.9
	930105	<3.4	9.2
	930224	<4.7	15
	930311	<4.0	10
	930409	6.8	18
	930616	6.3	14
	930917	7	17
	931203	7.6	19
	940107	<3.8	9.2
	940624	<10	13
	940923	<11	8.7
	941209	<4.6	6.6
SD WARREN (Westbrook)	880101	6.3	
	1989	1	
	901118	<3	8
	910425	<5	<5
	910716	<8	<5
	911203	<8	<5
	920218	<2.8	7
	920507	<1.2	4.6
	920715	<5.8	<4.9
	921114	<1.8	3.9
	930303	<7.8	16
	930617	<1.5	<6.4
	930915	<2.4	5.7
	931208	<3.4	<7.3
	940130	<6.5	<9.8
	940324		<5.9
	940727	3.6	7.8
	941212	<6.0	<15.8

APPENDIX 5

2378-TCDD AND 2378-TCDF IN SEDIMENTS

FROM VARIOUS STATIONS ON THE ANDROSCOGGIN RIVER

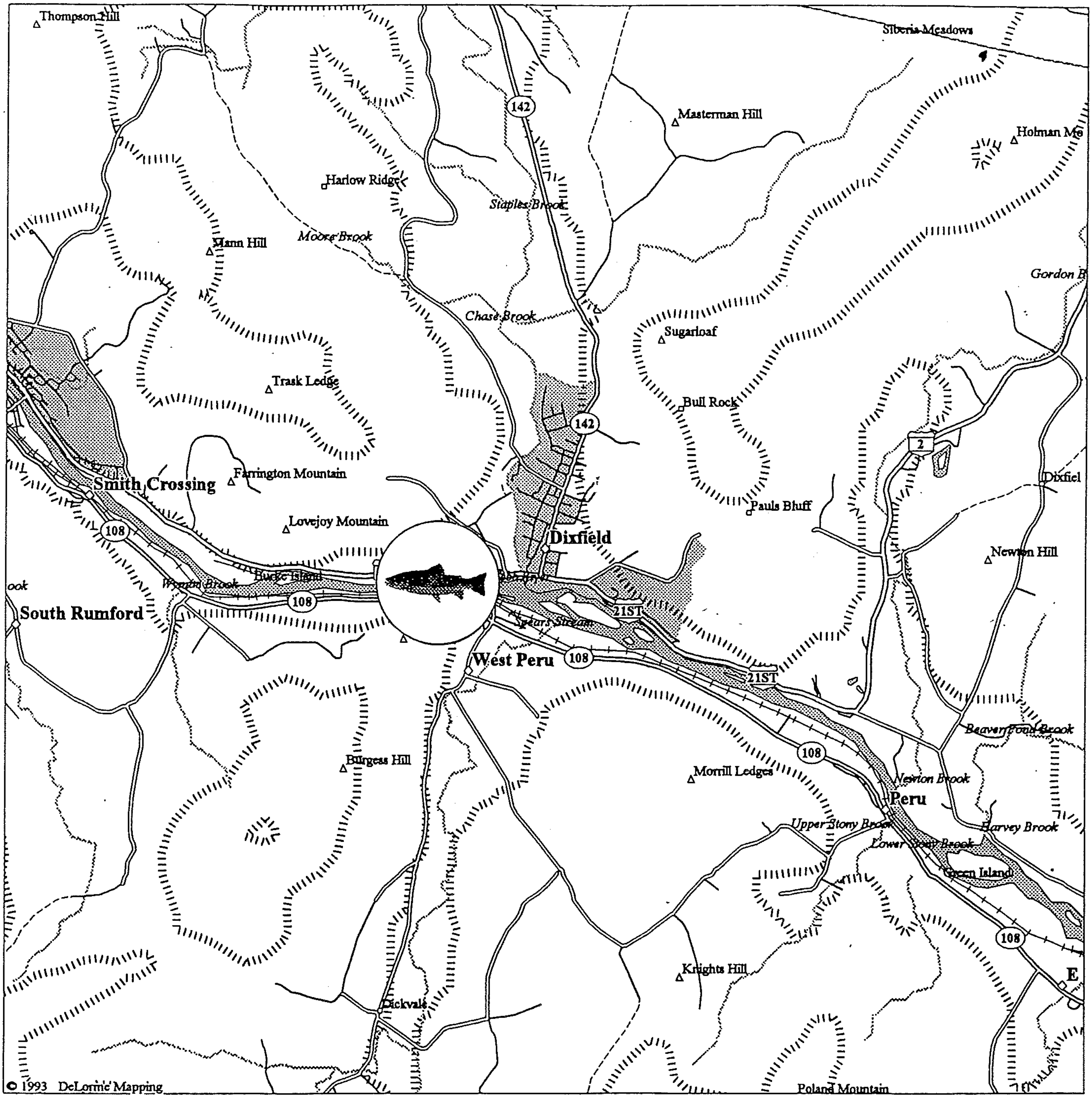
APPENDIX 5. 2378-TCDD AND 2378-TCDF IN SEDIMENTS FROM STATIONS ON THE ANDROSCOGGIN RIVER (pg/g)

LOCATION	DATE	2378-TCDD	2378-TCDF	% MOISTURE	% DOC
Virginia Impoundment Rumford N443147 W703217	910308	4.4	185		2.35
Riley Impoundment Jay N443002 W701458	910306	5.3	168		3.31
Otis Impoundment Livermore Falls N442846 W701213	910327	E6.8	162		2.85
Gulf Island Pond Turner N441520 W701050	850711	23.1			
Gulf Island Pond Turner N441420 W701125	850711	30.3			
Gulf Island Pond Turner N441225 W701210	850711	20.4			
Gulf Island Pond Greene N441040 W701240	850711	39.5 42.6dup			
Gulf Island Pond Greene N440932 W701222	910313	27.4	371		6.79
Worumbo Impound. Lisbon Falls N435950 W700405	910327	4.7	64.2		2.31
Brunswick below dam N435445 W695550	850711	2.5			
Brunswick Cow Island N435520 W695745	850711	1.7			

APPENDIX 6

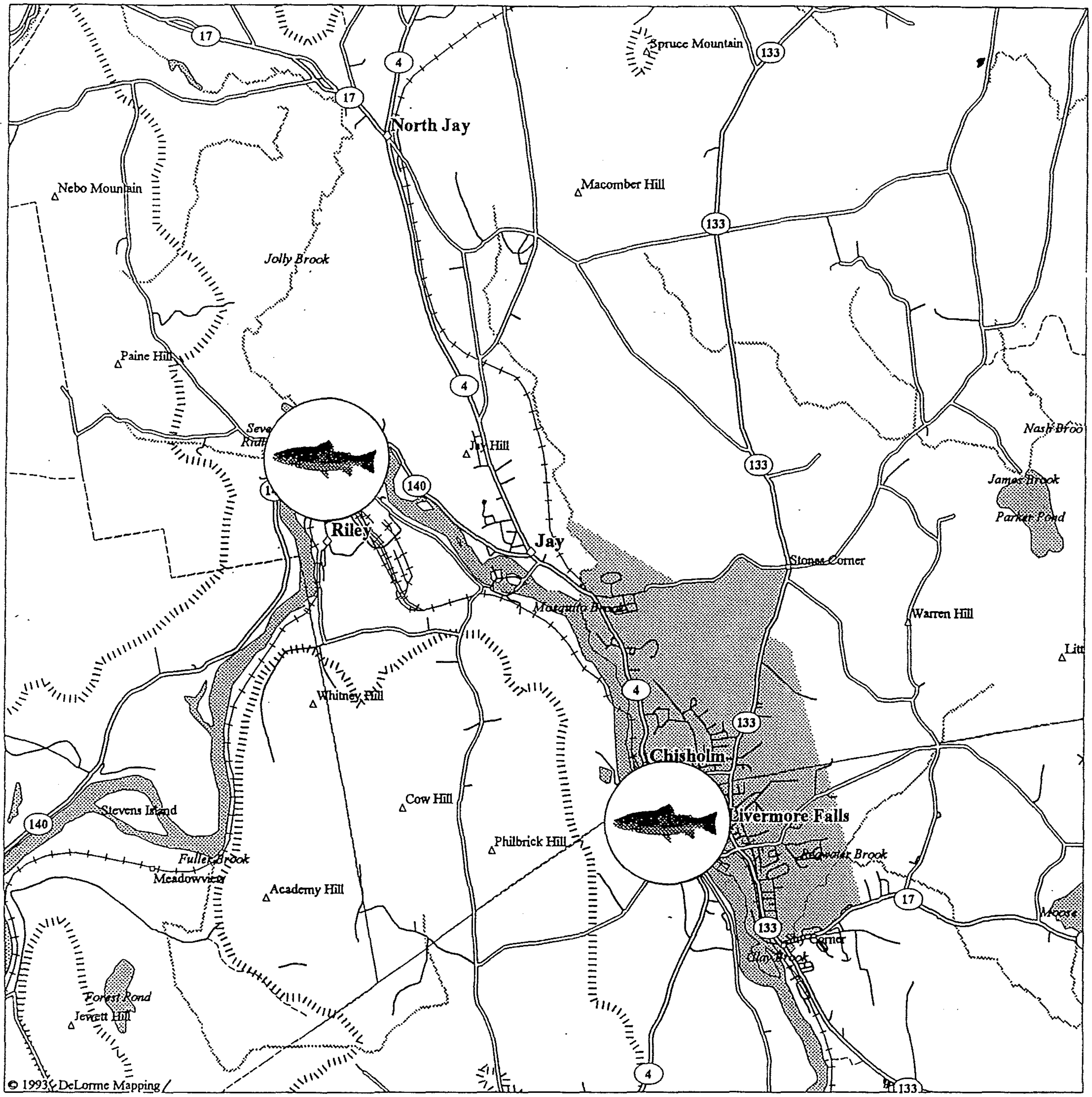
SAMPLE LOCATION MAPS

ARR ANDROSCOGGIN RIVER AT RUMFORD

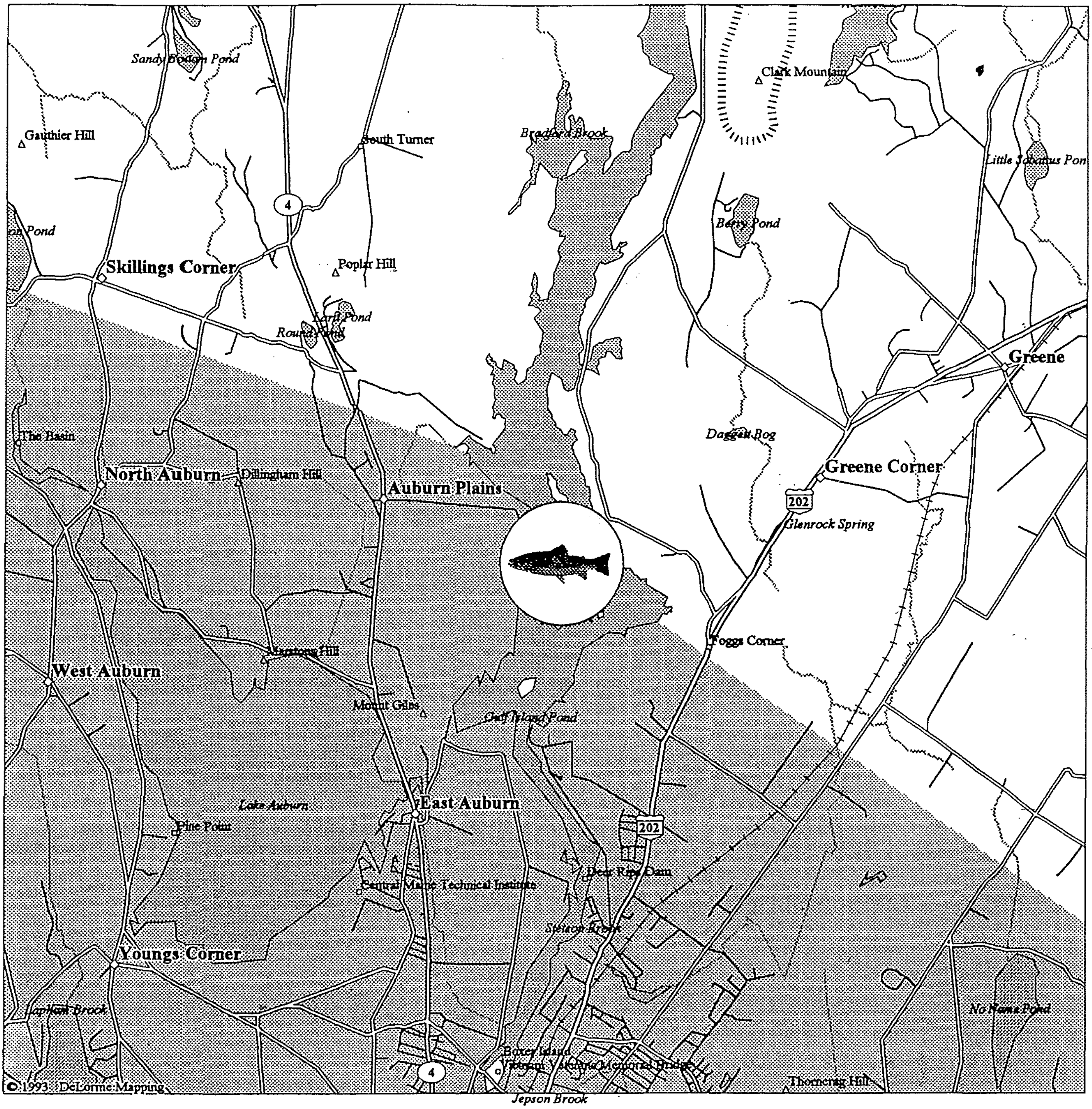


ARJ ANDROSCOGGIN RIVER AT JAY

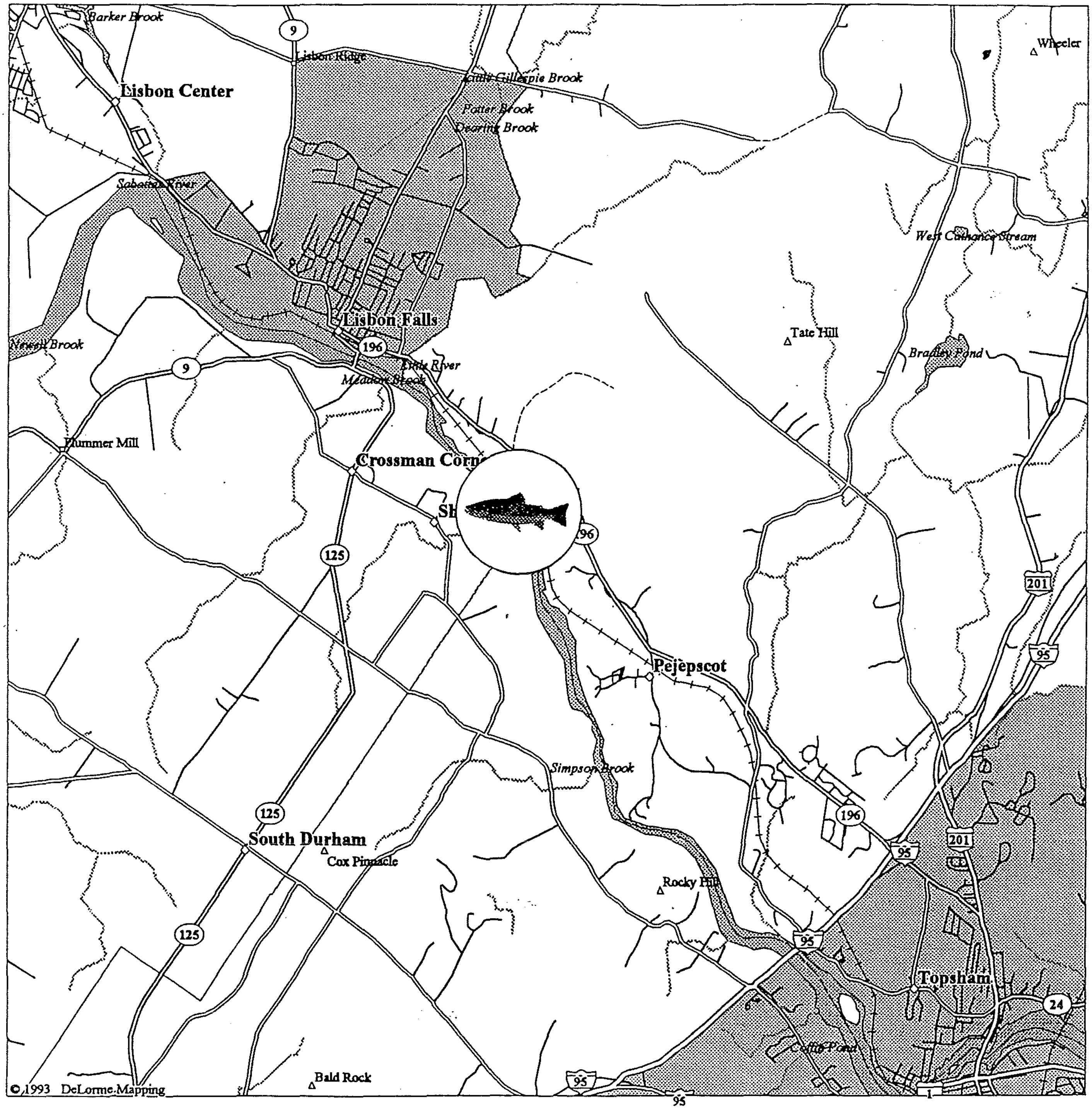
ARLV ANDROSCOGGIN RIVER AT LIVERMORE FALLS



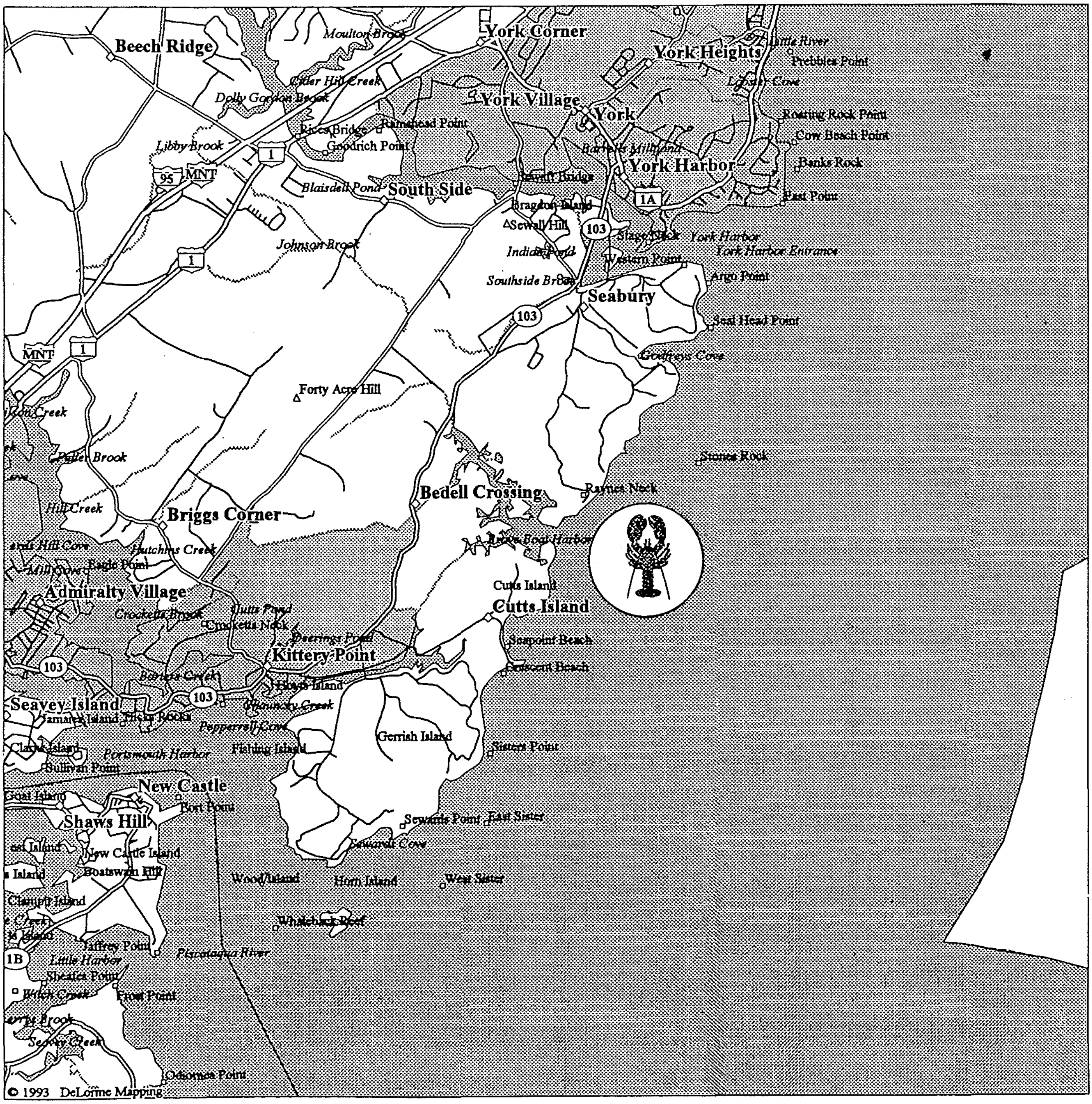
ARG ANDROSCOGGIN RIVER AT GULF ISLAND POND, AUBURN



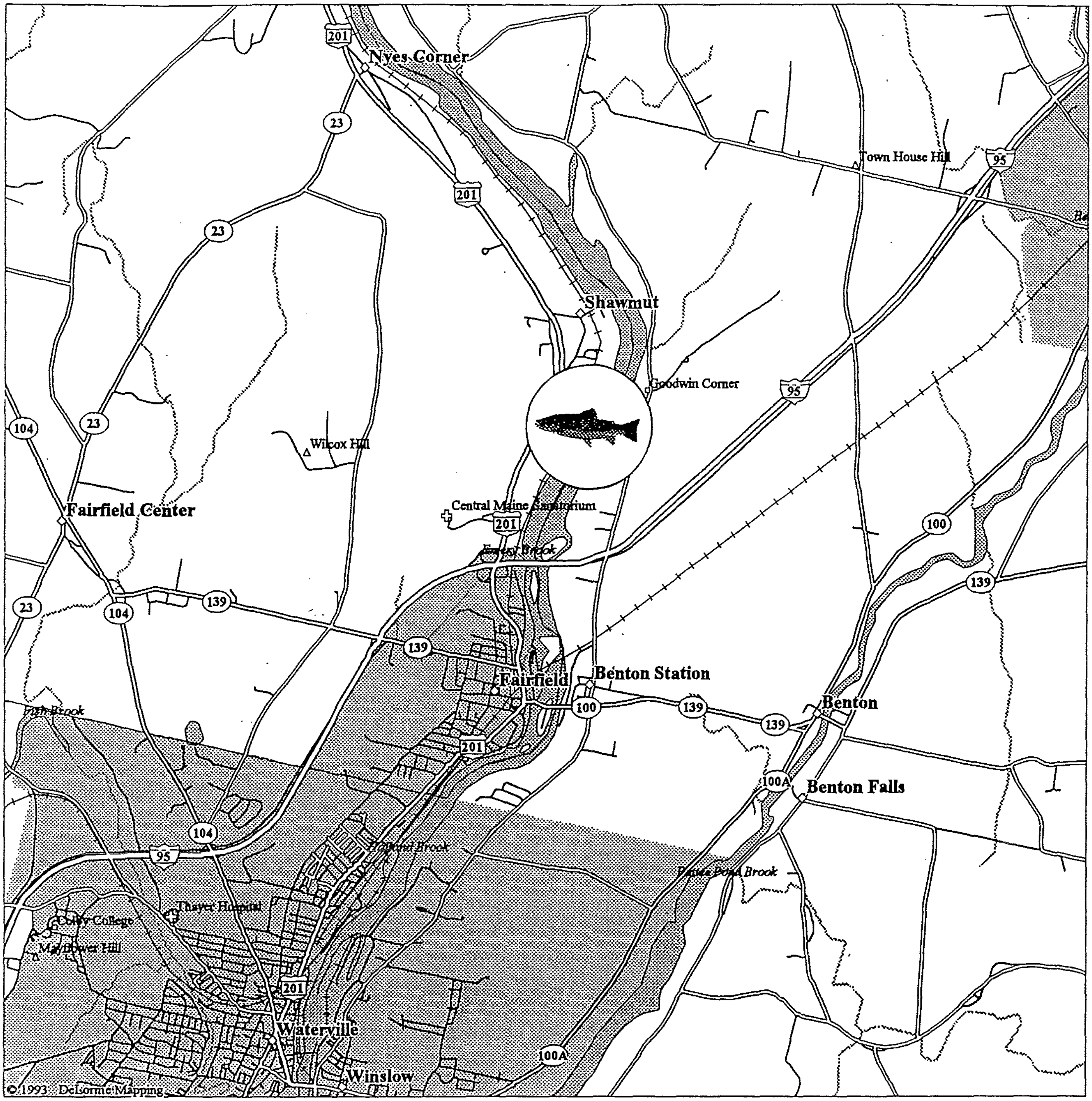
ARLS ANDROSCOGGIN RIVER AT LISBON FALLS



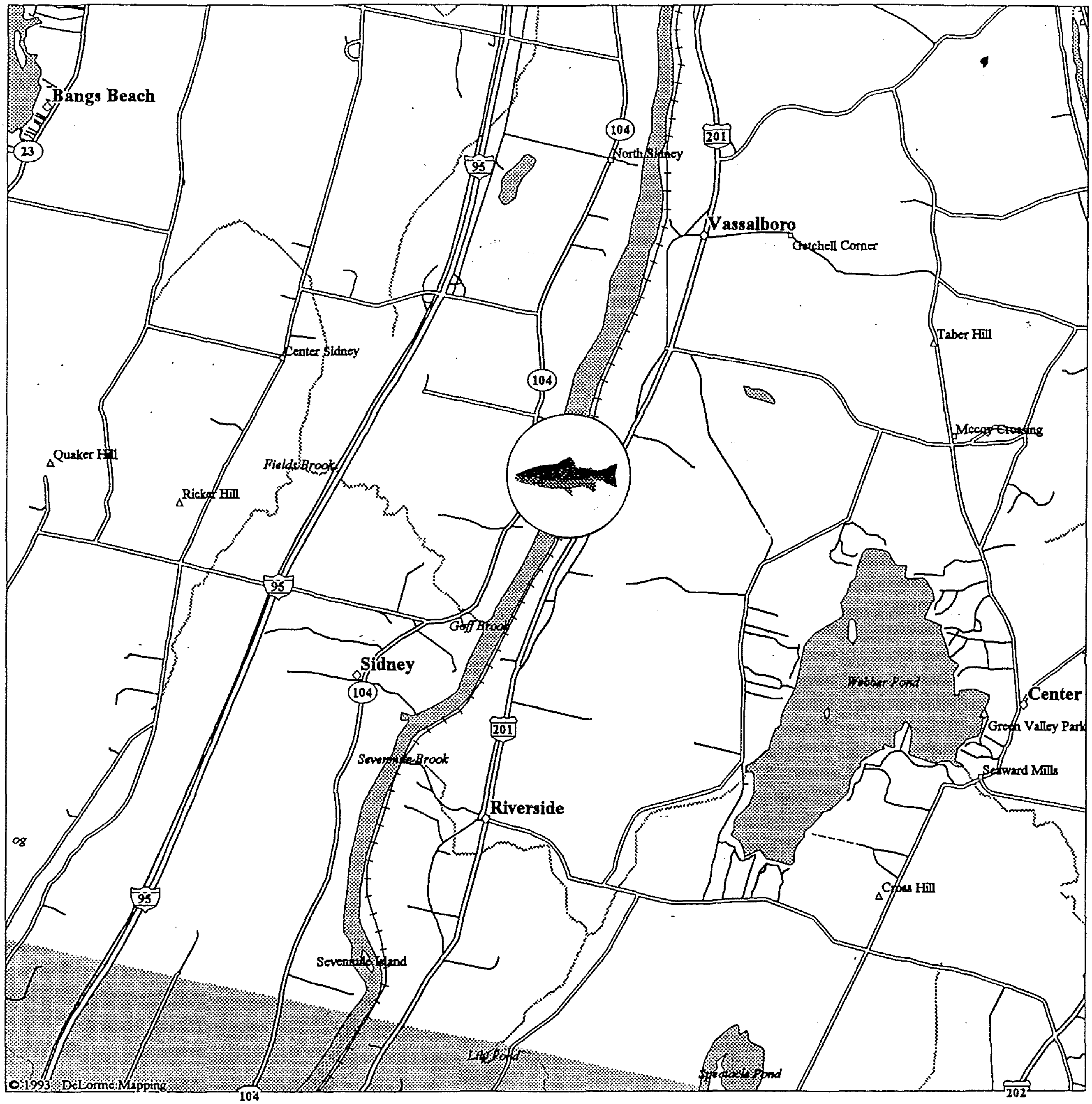
BVB BRAVE BOAT HARBOR AT KITTERY



KRF KENNEBEC RIVER AT SHAWMUT, FAIRFIELD

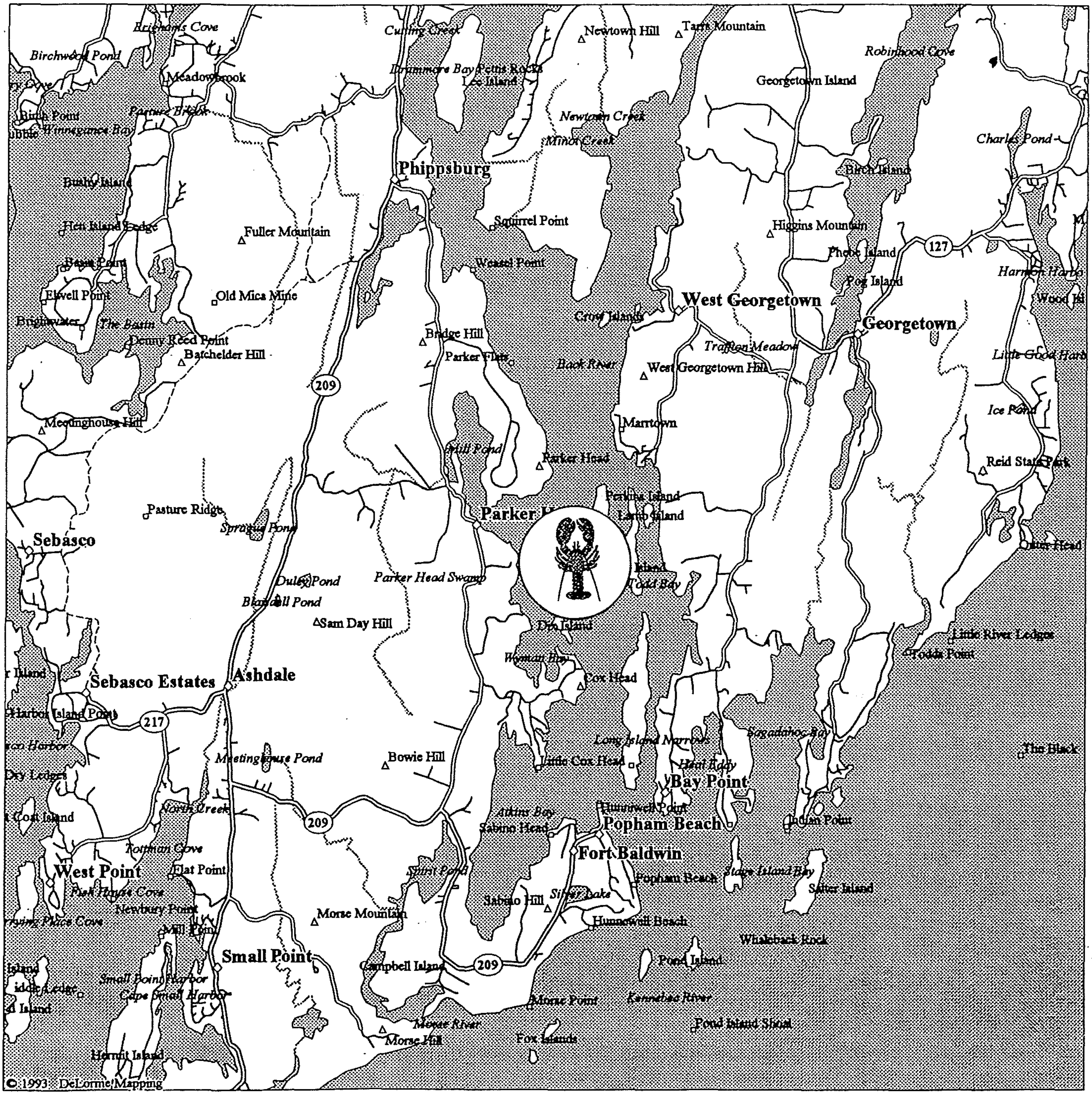


KRS KENNEBEC RIVER AT SIDNEY



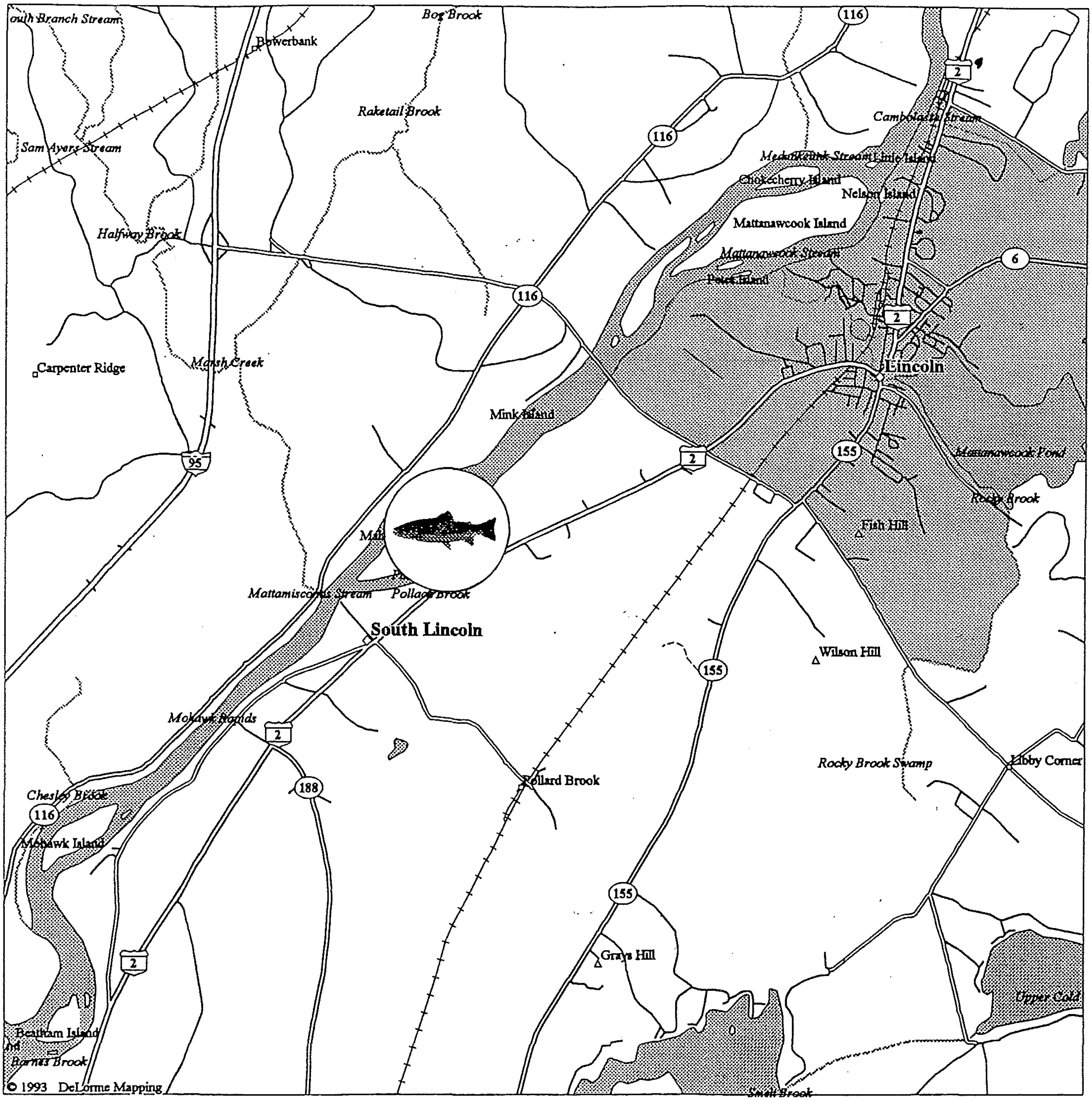
KRA KENNEBEC RIVER AT AUGUSTA

KRP KENNEBEC RIVER AT PHIPPSBURG

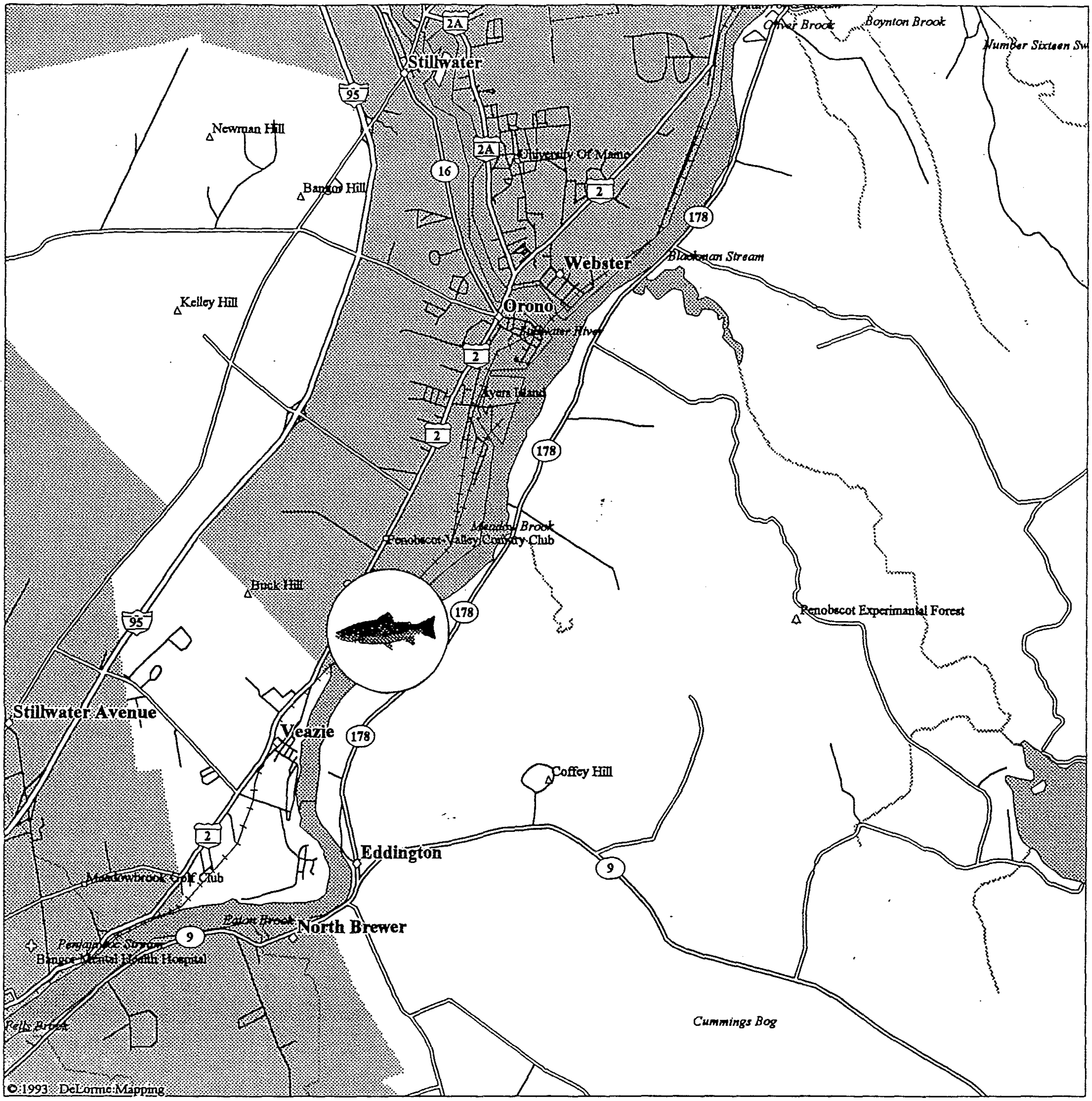


MCH MACHIAS BAY AT MACHIAS

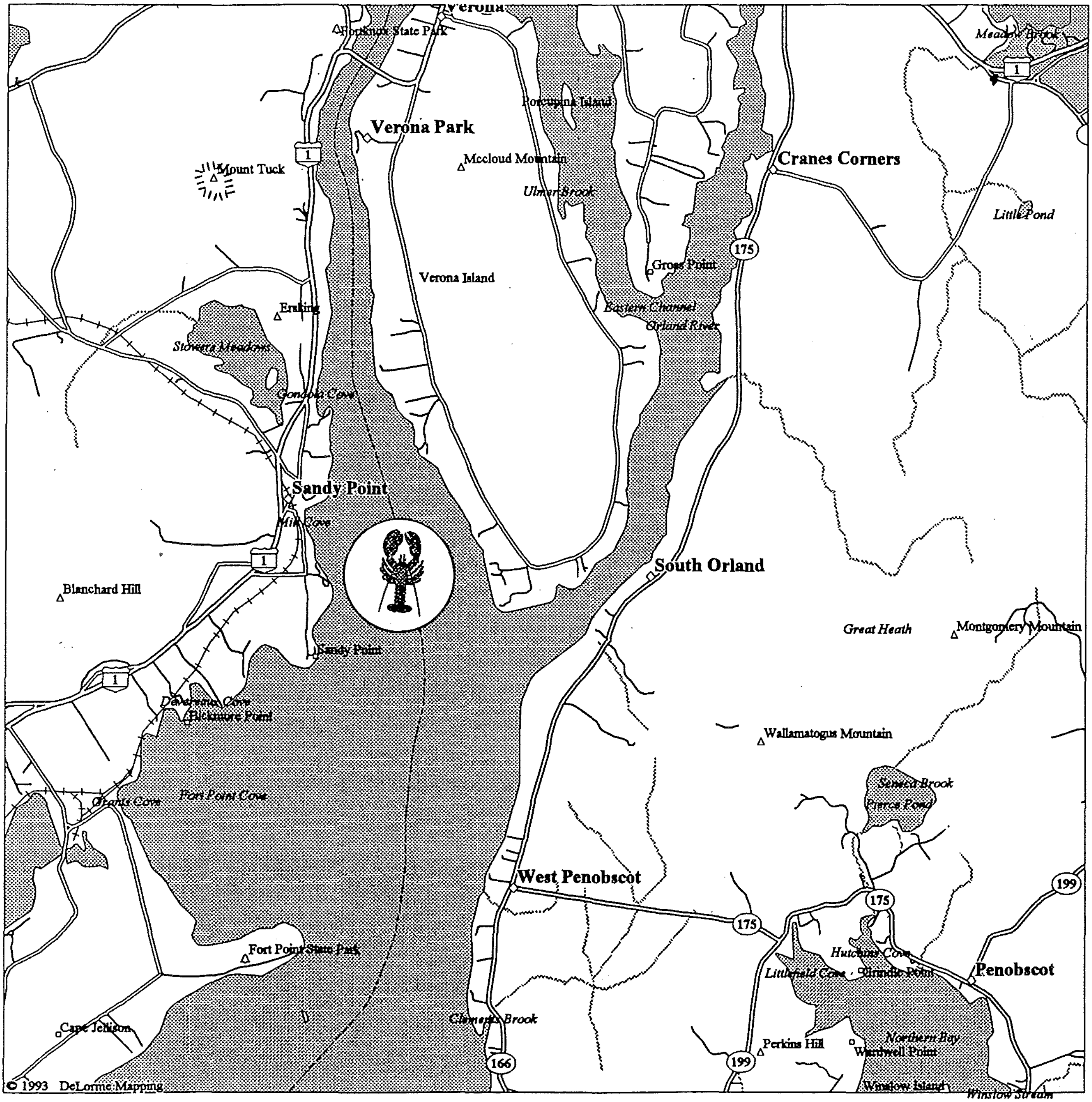
PBL PENOBSCOT RIVER AT SOUTH LINCOLN



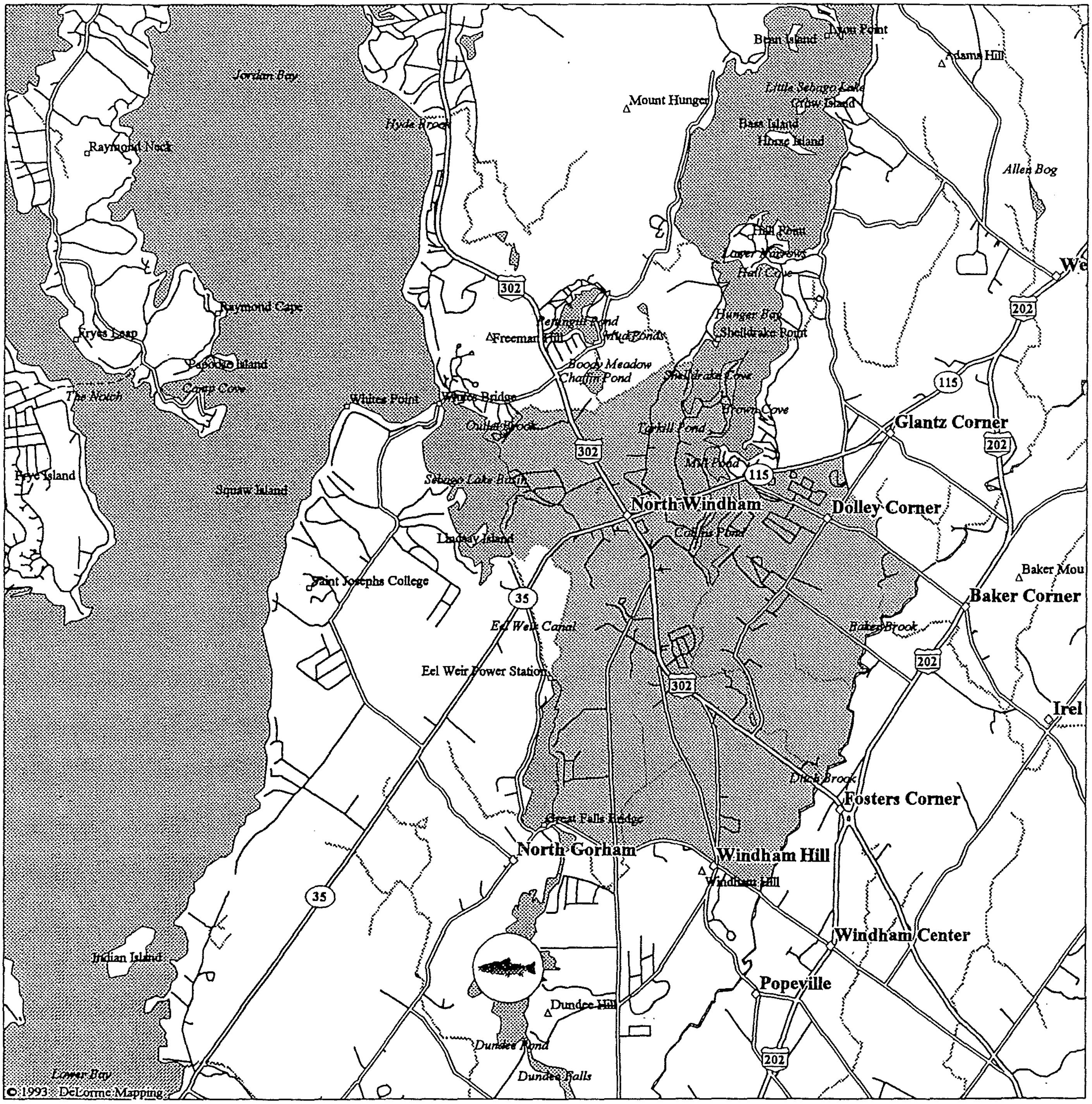
PBV PENOBSCOT RIVER AT VEAZIE



PBS PENOBSCOT RIVER AT STOCKTON SPRINGS

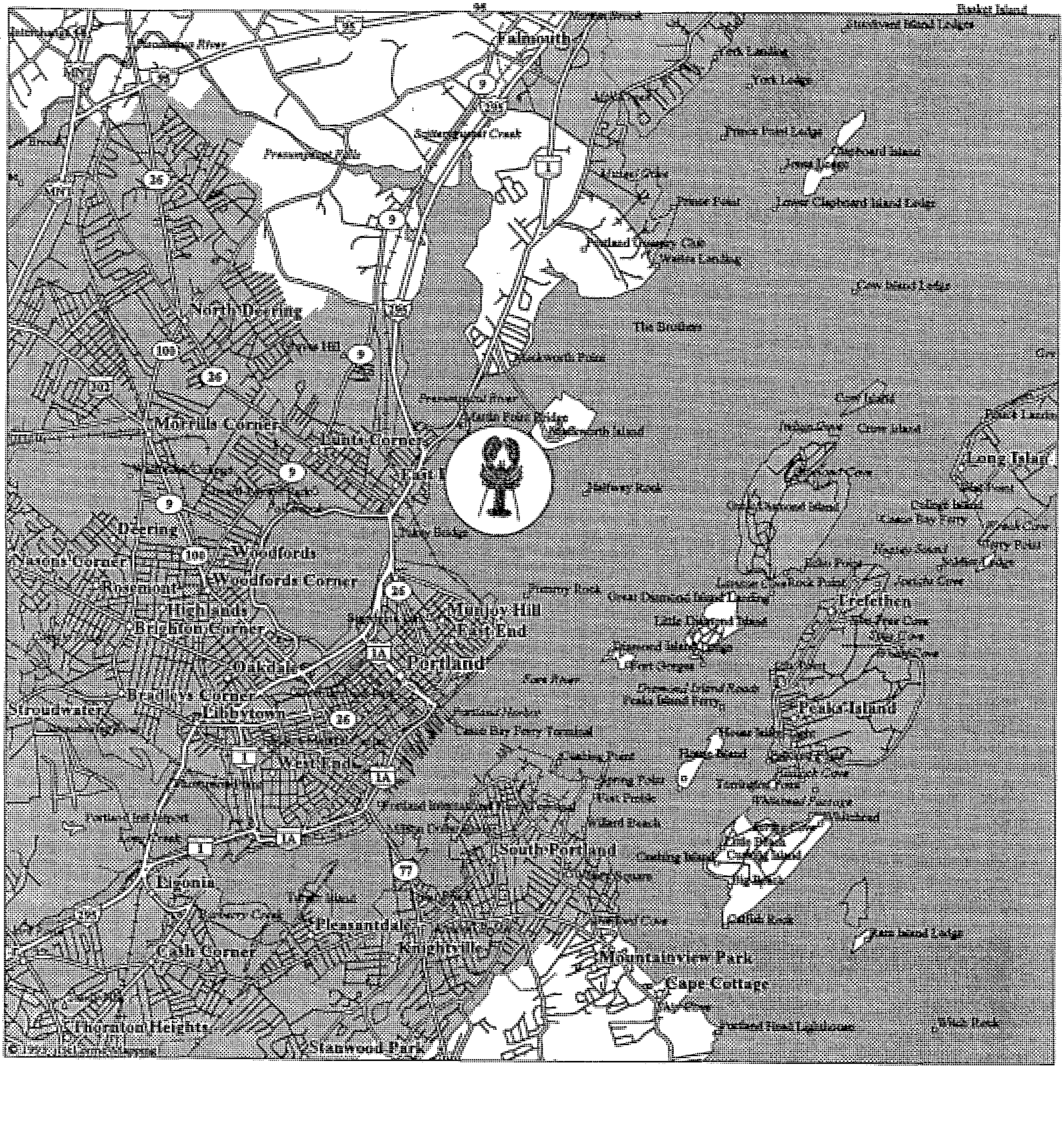


PRU PRESUMPSCOT RIVER AT WINDHAM



PRW PRESUMPSCOT RIVER AT WESTBROOK

PRP PRESUMPSCOT RIVER AT PORTLAND



SCB SACO BAY AT SCARBOROUGH

SLF SALMON FALLS RIVER AT SOUTH BERWICK

SJR1 ST JOHN RIVER AT FRENCHVILLE

SJR3 ST JOHN RIVER AT MADAWASKA

SBW W BR SEBASTICOOK RIVER AT PALMYRA

APPENDIX 7

LENGTHS, WEIGHTS, AND PERCENT LIPID

IN 1994 FISH SAMPLES

LENGTHS, WEIGHTS, AND PERCENT LIPID IN 1994 FISH SAMPLES

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
ANDROSCOGGIN RIVER					
Rumford					ARR-SMB-COMP
ARR-SMB-01	940711	457	1280	0.88	01
ARR-SMB-03	940711	411	980	2.62	02
ARR-SMB-04	940711	414	1010	2.62	02
ARR-SMB-05	940711	424	1200	2.08	03
ARR-SMB-06	940711	424	1170	2.08	03
ARR-SMB-07	940711	368	720	2.8	04
ARR-SMB-08	940711	351	630	2.8	04
ARR-SMB-09	940711	325	470	2.25	05
ARR-SMB-10	940712	348	620	2.25	05
ARR-SMB-11	940712	368	700	0.88	01
mean		**389**	**878**	**2.13**	
					ARR-WHS-COMP
ARR-WHS-01	940712	368	560	5.32	01
ARR-WHS-02	940712	406	750	5.32	01
ARR-WHS-03	940712	399	660	5.32	01
ARR-WHS-04	940712	394	720	5.32	01
ARR-WHS-05	940712	427	770	5.32	01
ARR-WHS-06	940712	363	610	6.71	02
ARR-WHS-07	940712	439	880	6.71	02
ARR-WHS-08	940712	419	830	6.71	02
ARR-WHS-09	940718	394	650	6.71	02
mean		**401**	**714**	**5.94**	
Livermore Falls					ARLV-SMB-COMP
ARLV-SMB-01	940727	305	390	0.43	01
ARLV-SMB-02	940727	386	750	0.23	05
ARLV-SMV-03	940728	401	700	0.43	01
ARLV-SMB-04	940728	394	700	0.36	02
ARLV-SMB-05	940728	409	760	0.36	02
ARLV-SMB-06	940728	320	340	0.23	05
ARLV-SMB-07	940728	330	480	0.48	03
ARLV-SMB-08	940728	312	370	0.48	03
ARLV-SMB-09	940728	300	325	0.44	04
ARLV-SMB-10	940728	318	380	0.44	04
mean		**347**	**520**	**0.39**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
ANDROSCOGGIN RIVER					
Livermore Falls					ARLV-WHS-COMP
ARLV-WHS-01	940727	345	610	3.9	01
ARLV-WHS-02	940727	356	580	3.9	01
ARLV-WHS-03	940727	389	740	3.9	01
ARLV-WHS-04	940727	335	550	3.9	01
ARLV-WHS-05	940727	292	450	3.9	01
ARLV-WHS-06	940728	401	700	4.17	02
ARLV-WHS-07	940728	297	270	4.17	02
ARLV-WHS-08	940728	394	660	4.17	02
ARLV-WHS-09	940728	292	300	4.17	02
ARLV-WHS-10	940728	348	500	4.17	02
mean		**345**	**536**	**4.04**	
Jay					ARJ-SMB-COMP
ARJ-SMB-01	940712	409	760	0.64	01
ARJ-SMB-02	940712	338	500	0.64	01
ARJ-SMB-03	940712	292	280	1.55	02
ARJ-SMB-04	940718	445	1100	1.55	02
ARJ-SMB-05	940718	396	650	1.46	03
ARJ-SMB-06	940718	351	620	1.46	03
ARJ-SMB-07	940718	343	510	0.5	04
ARJ-SMB-08	940719	325	460	0.5	04
ARJ-SMB-09	940719	378	710	1.43	05
ARJ-SMB-10	940719	340	460	1.43	05
mean		**362**	**605**	**1.12**	
					ARJ-WHS-COMP
ARJ-WHS-01	940719	406	740	8.02	01
ARJ-WHS-02	940719	424	890	8.02	01
ARJ-WHS-03	940719	404	750	8.02	01
ARJ-WHS-04	940719	465	960	8.02	01
ARJ-WHS-05	940719	434	770	8.02	01
ARJ-WHS-06	940719	457	880	5.3	02
ARJ-WHS-07	940719	419	800	5.3	02
ARJ-WHS-08	940719	439	840	5.3	02
ARJ-WHS-09	940719	422	760	5.3	02
ARJ-WHS-10	940719	399	700	5.3	02
mean		**427**	**809**	**6.66**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
ANDROSCOGGIN RIVER					
Auburn					ARG-WHS-COMP
ARG-WHS-01	940801	353	410	2.72	01
ARG-WHS-02	940801	399	640	2.72	01
ARG-WHS-03	940802	406	670	2.72	01
ARG-WHS-04	940802	333	360	2.72	01
ARG-WHS-05	940802	371	560	2.72	01
ARG-WHS-06	940802	361	470	2	02
ARG-WHS-07	940802	389	590	2	02
ARG-WHS-08	940802	399	600	2	02
ARG-WHS-09	940802	373	450	2	02
ARG-WHS-10	940802	353	480	2	02
mean		**374**	**523**	**2.36**	
					ARG-BUL-COMP
ARG-BUL-01	940801	300	380	1.92	01
ARG-BUL-02	940802	312	430	1.92	01
ARG-BUL-03	940802	269	260	1.92	01
ARG-BUL-04	940802	257	230	1.92	01
ARG-BUL-05	940803	305	360	1.92	01
ARG-BUL-06	940804	292	350	0.94	02
ARG-BUL-07	940804	274	235	0.94	02
ARG-BUL-08	940804	320	430	0.94	02
ARG-BUL-09	940804	305	385	0.94	02
mean		**293**	**340**	**1.48**	
					ARG-SMB-COMP
ARG-SMB-01	940801	295	295	0.95	05
ARG-SMB-02	940802	348	530	1.09	03
ARG-SMB-03	940803	318	360	0.71	04
ARG-SMB-04	940803	272	250	0.95	05
ARG-SMB-05	941011	394	820	1.48	02
ARG-SMB-06	940615	349	500	1.09	03
ARG-SMB-07	940615	381	265	1.48	02
ARG-SMB-08	940616	349	550	1.48	01
ARG-SMB-09	940616	311	500	0.71	04
ARG-SMB-10	940707	343	550	1.48	01
mean		**336**	**462**	**1.14**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
ANDROSCOGGIN RIVER					
Lisbon Falls					ARLS-SMB-COMP
ARLS-SMB-01	940720	305	350	0.39	01
ARLS-SMB-02	940720	450	910	0.39	01
ARLS-SMB-03	940720	305	340	0.6	02
ARLS-SMB-04	940721	310	370	0.6	02
ARLS-SMB-05	940721	295	730	0.79	03
ARLS-SMB-06	940725	292	320	0.79	03
ARLS-SMB-07	940725	279	250	0.36	04
ARLS-SMB-08	940725	287	290	0.36	04
ARLS-SMB-09	940727	279	290	0.77	05
ARLS-SMB-10	940727	384	690	0.77	05
mean		**319**	**454**	**0.58**	
Lisbon Falls					ARLS-WHS-COMP
ARLS-WHS-01	940721	389	700	4.09	01
ARLS-WHS-02	940721	414	720	4.09	01
ARLS-WHS-03	940721	356	510	4.09	01
ARLS-WHS-04	940721	401	760	4.09	01
ARLS-WHS-05	940721	338	520	4.09	01
ARLS-WHS-07	940725	366	580	4.83	02
ARLS-WHS-08	940726	384	610	4.83	02
ARLS-WHS-09	940726	356	510	4.83	02
ARLS-WHS-10	940726	361	500	4.83	02
ARLS-WHS-11	940726	406	700	4.83	02
mean		**377**	**611**	**4.46**	
KENNEBEC RIVER					
Fairfield					KRF-SMB-COMP
KRF-SMB-02	940810	323	440	1.58	03
KRF-SMB-03	940810	312	370	1.37	01
KRF-SMB-04	940810	310	380	1.37	01
KRF-SMB-06	940810	338	550	2.89	05
KRF-SMB-08	940811	333	490	1.8	04
KRF-SMB-09	940811	376	780	1.93	02
KRF-SMB-10	940811	310	360	1.8	04
KRF-SMB-11	940811	335	700	1.58	03
KRF-SMB-12	940816	343	640	2.89	05
KRF-SMB-13	940817	411	940	1.93	02
mean		**339**	**565**	**1.91**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
KENNEBEC RIVER					
Fairfield					
KRF-BNT-01	940704	483	1200	3.81	
KRF-BNT-02	940712	457	1180	3.36	
KRF-BNT-03	940712	470	1220	3.42	
KRF-BNT-04	940715	445	990	3.13	
KRF-BNT-05	940716	445	1060	4.11	
mean		**460**	**1130**	**3.57**	
					KRF-WHS-COMP
KRF-WHS-01	940811	368	750	8.49	01
KRF-WHS-02	940811	305	350	8.49	01
KRF-WHS-03	940812	376	730	8.49	01
KRF-WHS-04	940816	399	800	8.49	01
KRF-WHS-05	940817	358	560	6.99	02
KRF-WHS-06	940817	282	300	6.99	02
KRF-WHS-07	940818	384	680	6.99	02
mean		**353**	**596**	**7.85**	
Sidney					KRS-SMB-COMP
KRS-SMB-01	940824	284	270	0.87	03
KRS-SMB-02	940824	279	250	0.61	05
KRS-SMB-03	940824	320	560	0.87	03
KRS-SMB-04	940825	429	970	0.75	01
KRS-SMB-05	940825	378	700	0.75	01
KRS-SMB-06	940825	310	340	0.91	02
KRS-SMB-07	940825	295	300	0.91	02
KRS-SMB-08	940826	292	450	0.61	05
KRS-SMB-09	940826	292	460	0.68	04
KRS-SMB-10	940826	297	470	0.68	04
mean		**318**	**477**	**0.76**	
					KRS-WHS-COMP
KRS-WHS-01	940825	381	740	6.21	01
KRS-WHS-02	940825	394	720	6.21	01
KRS-WHS-03	940825	338	500	6.21	01
KRS-WHS-04	940825	312	440	6.21	01
KRS-WHS-05	940825	318	440	6.21	01
KRS-WHS-06	940825	312	410	9.54	02
KRS-WHS-07	940826	335	520	9.54	02
KRS-WHS-08	940826	320	390	9.54	02
KRS-WHS-09	940826	366	680	9.54	02
KRS-WHS-10	940826	338	490	9.54	02
mean		**341**	**533**	**7.88**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
KENNEBEC RIVER					
Augusta					KRA-WHS-COMP
KRA-WHS-01	940920	465	1020	5.2	01
KRA-WHS-02	940920	437	980	5.2	01
KRA-WHS-03	940920	452	1020	5.2	01
KRA-WHS-04	940920	424	890	5.2	01
KRA-WHS-05	940920	460	1080	5.2	01
KRA-WHS-06	940920	462	1070	4.08	02
KRA-WHS-07	940920	439	950	4.08	02
KRA-WHS-08	940920	450	950	4.08	02
KRA-WHS-09	940920	450	960	4.08	02
KRA-WHS-10	940920	432	880	4.08	02
mean		**447**	**980**	**4.64**	
KRA-SMB-01	940921	356	NR	2.93	
KRA-SMB-02	940922	385	NR	4.09	
KRA-SMB-03	940922	370	NR	1.52	
KRA-SMB-04	940922	420	NR	1.39	
mean		**383**		**2.48**	
PENOBSCOT RIVER					
South Lincoln					PBL-SMB-COMP
PBL-SMB-02	940820	350	540	0.98	03
PBL-SMB-03	940822	331	460	0.96	02
PBL-SMB-04	940822	339	580	1.07	04
PBL-SMB-05	940822	335	480	0.96	02
PBL-SMB-06	940822	329	490	1.07	04
PBL-SMB-07	940822	341	530	1.21	01
PBL-SMB-08	940822	389	680	1.03	05
PBL-SMB-09	940822	356	560	1.21	01
PBL-SMB-10	940822	375	640	0.98	03
PBL-SMB-12	940823	400	880	1.03	05
mean		**355**	**584**	**1.05**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
PENOBSCOT RIVER					
South Lincoln					PBL-WHS-COMP
PBL-WHS-01	940818	405	860	8.56	01
PBL-WHS-02	940818	415	880	8.56	01
PBL-WHS-03	940818	440	1000	8.56	01
PBL-WHS-04	940818	480	1240	8.56	01
PBL-WHS-05	940818	540	1480	8.56	01
PBL-WHS-06	940823	450	980	8.94	02
PBL-WHS-07	940823	455	980	8.94	02
PBL-WHS-08	940823	455	1060	8.94	02
PBL-WHS-09	940823	445	1020	8.94	02
PBL-WHS-10	940823	470	1200	8.94	02
mean		**456**	**1070**	**8.75**	
Veazie					PBV-SMB-COMP
PBV-SMB-01	940810	292	230	0.56	03
PBV-SMB-02	940810	302	320	0.95	04
PBV-SMB-03	940810	284	250	0.6	05
PBV-SMB-04	940810	274	215	0.56	03
PBV-SMB-05	940810	292	250	0.95	04
PBV-SMB-06	940810	292	250	0.6	05
PBV-SMB-07	940810	312	320	0.61	02
PBV-SMB-08	940810	381	620	0.58	01
PBV-SMB10	940811	330	430	0.58	01
PBV-SMB-11	940811	315	280	0.61	02
mean		**308**	**317**	**0.66**	
					PBV-WHS-COMP
PBV-WHS-01	940810	330	405	6.05	01
PBV-WHS-02	940810	315	370	6.05	01
PBV-WHS-03	940811	348	480	6.05	01
PBV-WHS-04	940816	399	845	5.92	02
PBV-WHS-05	940823	282	250	5.92	02
PBV-WHS-06	940823	295	300	5.92	02
PBV-WHS-07	940823	274	210	5.92	02
mean		**320**	**409**	**5.98**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
PRESUMPSCOT RIVER					
Windham					PRU-SMB-COMP
PRU-SMB-01	940907	297	345	1.24	03
PRU-SMB-02	940907	292	300	1.24	03
PRU-SMB-03	940907	282	280	1.54	05
PRU-SMB-04	940907	330	490	1.76	01
PRU-SMB-05	940907	338	520	1.44	02
PRU-SMB-06	940907	287	300	1.28	04
PRU-SMB-07	940908	279	360	1.28	04
PRU-SMB-08	940908	366	690	1.76	01
PRU-SMB-09	940913	335	515	1.44	02
PRU-SMB-10	940913	279	290	1.54	05
mean		**309**	**409**	**1.45**	
					PRU-WHS-COMP
PRU-WHS-01	940907	427	860	9.19	01
PRU-WHS-02	940907	483	1250	9.19	01
PRU-WHS-03	940907	452	970	9.19	01
PRU-WHS-04	940907	457	1050	9.19	01
PRU-WHS-05	940907	452	1125	9.19	01
PRU-WHS-06	940907	429	1130	6.87	02
PRU-WHS-07	940907	462	1180	6.87	02
PRU-WHS-08	940907	518	1770	6.87	02
PRU-WHS-09	940908	366	600	6.87	02
PRU-WHS-10	940908	406	930	6.87	02
mean		**445**	**1087**	**8.03**	
Westbrook					PRW-WHS-COMP
PRW-WHS-01	940830	411	1120	5.54	01
PRW-WHS-02	940830	381	770	5.54	01
PRW-WHS-03	940830	399	990	5.54	01
PRW-WHS-04	940830	396	1020	5.54	01
PRW-WHS-05	940830	325	610	5.54	01
PRW-WHS-06	940830	417	1140	6.08	02
PRW-WHS-07	940831	338	480	6.08	02
PRW-WHS-08	940831	427	900	6.08	02
PRW-WHS-09	940901	381	690	6.08	02
PRW-WHS-10	940901	318	430	6.08	02
mean		**379**	**815**	**5.81**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
PRESUMPSCOT RIVER					
Westbrook					
PRW-SMB-01	940831	274	220	0.86	
PRW-SMB-02	940831	251	170	0.74	
PRW-SMB-03	940831	305	340	0.89	
PRW-SMB-05	940901	384	800	1.55	
PRW-SMB-06	940901	287	315	1.25	
mean		**300**	**369**	**1.06**	
SALMON FALLS RIVER					
South Berwick					SLF-WHS-COMP
SLF-WHS-01	940914	465	1080	5.23	01
SLF-WHS-02	940914	483	1130	5.23	01
SLF-WHS-03	940914	427	1000	5.23	01
SLF-WHS-04	940914	417	900	5.23	01
SLF-WHS-05	940914	457	1140	5.23	01
SLF-WHS-06	940914	457	1010	4.19	02
SLF-WHS-07	940914	445	1055	4.19	02
SLF-WHS-08	940914	427	1020	4.19	02
SLF-WHS-09	940914	424	810	4.19	02
SLF-WHS-10	940914	409	800	4.19	02
mean		**441**	**995**	**4.71**	
SLF-SMB-02	940603	298	290	0.23	
SLF-SMB-03	940603	298	250	0.45	
mean		**298**	**270**	**0.34**	
SEBASTICOOK RIVER					
Palmyra W Branch					SBW-WHS-COMP
SBW-WHS-01	940921	432	NR	3.13	01
SBW-WHS-02	940921	351	NR	3.13	01
SBW-WHS-03	940921	361	NR	3.13	01
SBW-WHS-04	940922	419	NR	3.13	01
SBW-WHS-05	940922	373	NR	3.13	01
SBW-WHS-06	940922	411	NR	3.37	02
SBW-WHS-07	940922	394	NR	3.37	02
SBW-WHS-08	940922	452	NR	3.37	02
SBW-WHS-09	940922	432	NR	3.37	02
mean		**403**		**3.24**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
SEBASTICOOK RIVER					
Palmyra W Branch					
SBW-SMB-01	940921	381	NR	1.08	
SBW-SMB-02	940921	409	NR	0.58	
SBW-SMB-03	940921	259	NR	1.28	
SBW-SMB-04	940922	345	NR	1.1	
SBW-SMB-05	940922	348	NR	1.52	
mean		**348**		**1.11**	
ST. JOHN RIVER					
SITE 1					
SJR1-WHS-706	941117	245	135		?
SJR1-WHS-715	941117	428	940		
SJR1-WHS-752	941117	484	1235		
SJR1-WHS-753	941117	392	627		
SJR1-WHS-606	941117	260	176		
SJR1-WHS-700	941117	306	313		
SJR1-WHS-747	941117	415	801		
SJR1-WHS-586	941117	287	260		
SJR1-WHS-596	941117	284	277		
SJR1-WHS-587	941117	474	995		
SJR1-WHS-748	941117	442	974		
mean		**365**	**612**		
SITE 2					
SJR2-BKT-437	941117	218	108	0.96	SJR-BKT-SITE3
SJR2-BKT-438	941117	161	33	0.96	SJR-BKT-SITE3
SJR2-BKT-531	941117	202	79	0.96	SJR-BKT-SITE3
SJR2-BKT-532	941117	193	67	0.96	SJR-BKT-SITE3
SJR2-BKT-533	941117	220	87	0.96	SJR-BKT-SITE3
mean		**199**	**75**	**0.96**	

FIELD ID	DATE yymmdd	LENGTH mm	WEIGHT gm	LIPID %	COMPOSITE ID
ST. JOHN RIVER					
SITE 3					
SJR3-WHS-892	941117	445	937	0.81	SJR-WHS-SITE3
SJR3-WHS-928	941117	443	879	0.81	SJR-WHS-SITE3
SJR3-WHS-115	941117	504	1199	0.81	SJR-WHS-SITE3
SJR3-WHS-883	941117	429	849	0.81	SJR-WHS-SITE3
SJR3-WHS-109	941117	459	1041	0.81	SJR-WHS-SITE3
SJR3-WHS-111	941117	488	1189	0.81	SJR-WHS-SITE3
SJR3-WHS-886	941117	445	888	0.81	SJR-WHS-SITE3
SJR3-WHS-874	941117	468	1088	0.81	SJR-WHS-SITE3
SJR3-WHS-127	941117	364	542	0.81	SJR-WHS-SITE3
SJR3-WHS-878	941117	465	1119	0.81	SJR-WHS-SITE3
mean		**451**	**973**	**0.81**	
SJR3-BKT-172	941117	156	30	0.96	SJR-BKT-SITE3
SJR3-BKT-173	941117	164	35	0.96	SJR-BKT-SITE3
SJR3-BKT-386	941117	240	110	0.96	SJR-BKT-SITE3