BIOASSAY REPORT
STATIC BASIC ACUTE
AQUATIC TOXICITY TEST

March 7 through March 11, 1996

Prepared for:
SPECIALTY PRODUCTS, INC.

Prepared by:

COFFEY LABORATORIES, INC.
12423 NE Whitaker Way
Portland, OR 97230

March 20, 1996

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Coffey Laboratories, Inc.
23 N.E. Whitaker Way Portland, OR 97230 (503) 254-1794 FAX (503) 254-1451

ANALYTICAL NARRATIVE

Ms. Nancy Baker
Specialty Products, Inc.
2410 104th St. Ct. S., Suite D
Tacoma, WA 98444

March 20, 1996
Job #: MX960229AS

Re: Data Analysis - Toxicity Tests

Dear Ms. Baker,

Coffey Laboratories, Inc. has completed the analysis of data collected from the aquatic bioassay which was performed on the sample that you delivered to us. The test was run according to the Washington Department of Ecology's (DOE) Static Acute Fish Toxicity Test, based on the US Environmental Protection Agency's *Method for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms;* EPA/600/4-85/013.

When tested at 100 and 1000 mg/L, this product did not display any toxic effects on the fish within the 96 hour bioassay. Based on these results, it should be safe to use this product for the treatment of the salmon ponds, tanks, or runs. However, I do recommend allowing the product to "cure" for as long as possible, and then rinsing the vessel(s) with copious amounts of water before introducing the fish.

Reconstituted moderately hard water was used for the controls and for the dilutions, which included three replicates of both 100 and 1000 parts per million. Ten fish were placed in each replicate at test initiation for a total of 30 fish per concentration. Mortality was observed and recorded daily for both the sample and a reference toxicant of sodium chloride which was run concurrently. In addition to mortality, the pH and dissolved oxygen were recorded daily in all replicates. Test temperatures remained steady at 12 ± 1°C , (with the exception of the first 24 hours when the air conditioning compressor failed. This situation was remedied, and test temperatures were restored. Although this was a deviation from the test method, the situation was remedied within 24 hours, and the fish did not display any adverse effects due to the increased temperatures.)

According to the EPA, test data is acceptable if control survival is at least 90%. According the DOE (80-12), a sample is considered to be "Dangerous Waste" if more than 11 cumulative deaths occur in the 1000 mg/L concentration. A sample is considered "Extremely Hazardous Waste" if more than 10 cumulative deaths occur in the 100 mg/L within 96 hours. The sample received by Coffey Laboratories on February 29, 1996 caused no deaths in either the 1000 mg/L concentration or the 100 mg/L concentration. Therefore, this sample is not considered to be "Dangerous" or "Extremely Hazardous" waste according to the DOE.

In this report, I have included a summary table and the actual raw data. In addition, I enclosed the reference toxicant data for your information. Please feel free to contact me should you have any questions.

Sincerely,
COFFEY LABORATORIES, INC.

Sybil Merrels
Aquatic Biologist

Approved by,

Susan M. Coffey
President

DATA SHEET FOR STATIC BASIC ACUTE FISH TOXICITY TEST

Laboratories: COFFEY LABORATORIES, INC.

Analyst: SM/JE
Job No. MX960229AS
Custabbr: Specialty Products

Beginning Date: March 7, 1996
Ending Date: March 11, 1996
Test Organism: *Oncorhynchus mykis*

Time: 14:30
Time: 14:30
Test Temperature: 12 ± 1°C

Lab. Ref. No.	Rep.	Conc. (mg/l)	Number of Cumulative Deaths					Dissolved Oxygen (mg/l)					pH @ 12°C					Temperature (°C)					Total Hardness (mg/L as $CaCO_3$)		Total Alkalinity (mg/L as $CaCO_3$)		Conductivity (µS)	
			0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96	0	96	0	96
9022948	1	Control	0	0	0	0	0	10.4	7.8	8.0	8.1	8.2	8.00	7.57	7.53	7.64	7.82	12.0	14.0	12.0	12.0	11.5	88	xx	82.0	xx	318	xxx
9022948	2	Control	0	0	0	0	0	10.4	xx	8.0	8.4	8.6	8.14	7.89	7.80	7.80	7.81	12.0	14.0	12.0	12.0	12.0	88	xx	81.7	xx	318	xxx
9022948	3	Control	0	0	0	0	0	10.4	xx	8.0	8.1	8.6	8.13	7.90	7.79	7.85	7.83	12.0	14.0	12.0	11.5	11.5	88	xx	81.1	xx	306	xxx
9022948	1	100	0	0	0	0	0	10.4	7.7	8.5	8.4	8.6	8.13	7.82	7.85	7.80	7.58	12.0	14.0	12.5	12.0	11.5	100	xx	82.1	xx	308	xxx
9022948	2	100	0	0	0	0	0	10.4	xx	8.1	8.0	8.2	8.13	7.87	7.83	7.87	7.82	12.0	14.0	12.0	12.0	11.5	88	xx	82.1	xx	302	xxx
9022948	3	100	0	0	0	0	0	10.4	xx	8.5	8.0	8.6	8.12	7.80	7.58	7.51	7.55	12.0	14.0	11.5	12.0	12.0	100	xx	81.1	xx	318	xxx
9022948	1	1000	0	0	0	0	0	10.3	7.6	8.2	7.5	7.4	8.11	7.82	7.58	7.48	7.48	12.0	14.0	12.0	12.0	12.0	88	xx	82.1	xx	317	xxx
9022948	2	1000	0	0	0	0	0	10.4	xx	8.2	8.0	7.8	8.10	7.85	7.67	7.57	7.53	12.0	14.0	12.0	12.0	12.0	88	xx	81.1	xx	318	xxx
9022948	3	1000	0	0	0	0	0	10.4	xx	7.8	7.8	7.8	8.13	7.58	7.62	7.48	7.59	12.0	14.0	12.0	12.5	11.5	100	xx	81.1	xx	313	xxx
Ref. Tox.	1	1.5 g/L	0	0	0	0	0	10.4	7.7	8.6	8.6	8.2	8.08	7.89	7.70	7.35	7.55	12.0	14.0	12.5	12.5	11.5	xx	xx	81.1	xx	2.05 mS	xxx
Ref. Tox.	2	3.0 g/L	0	0	0	0	0	10.5	7.7	8.6	8.5	8.7	8.01	7.81	7.62	7.49	7.53	12.0	14.0	12.0	11.5	11.5	xx	xx	82.1	xx	3.81 mS	xxx
Ref. Tox.	3	6.0 g/L	0	0	0	0	0	10.6	7.7	8.3	8.4	8.3	8.04	7.58	7.63	7.47	7.54	12.0	14.0	11.5	11.5	12.0	xx	xx	82.1	xx	10.96 mS	xxx
Ref. Tox.	4	12.0 g/L	0	1	1	1	1	10.5	7.7	8.6	8.6	8.6	7.93	7.53	7.58	7.47	7.54	12.0	14.0	12.0	12.0	12.0	xx	xx	81.1	xx	>20 mS	xxx
Ref. Tox.	5	24.0 g/L	0	20	20	20	20	10.5	xx	xx	xx	xx	7.96	7.71	xx	xx	xx	12.0	xx	xx	xx	xx	xx	xx	82.0	xx	>20 mS	xxx

Sample Description: This sample was a polyeuro sealant to be used for trout runs and/or ponds.
Average Weight: 0.29 g Mean Length: 3.4 cm Longest: 3.9 cm Shortest: 2.9 cm Ratio (long/Short): 1.3 Number of Organisms per chamber: 10
Comments: This sample is not considered to be dangerous or extremely hazardous waste because no fish died in either the 100 or 1000 mg/L concentrations.

Data Verified by: SM Date: 3/15/96

_____EHW > 10/30
_____DW > 11/30

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

APPENDIX A

TEST AND REFERENCE TOXICANT
RAW DATA SHEETS

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way Portland, OR 97230 (503) 254-1794 FAX (503) 254-1452

Doc ID: O:\Clom\Port.BRN\LifeSci.SEC\Forms\ToxHzWst.FOR
Revision #: 1.00
Revision Date: 11/04/92

STATIC ACUTE TOXICITY TEST - HAZARDOUS WASTE

Job Number: Reference Toxicant Source: NaCl Analyst: JE/ERL/SM

Custabbr: QA/QC Test Fish: Onchorynkus mykiss Reviewed By: SM

Start Date: 3/7/96 Time: 14:30 End Date: 3/11/96 1430

Conc. (mg/L)	Rep.	Number of organisms/ container	Mortality / 24 hrs. 0	24	48	72	96	Total Mortality	pH 0	24	48	72	96	Specific Cond. 0	96	Dissolved Oxygen (mg/L) 0	24	48	72	96	Temperature (°C) 0	24	48	72	96
0	1	10	0	0	0	0	0	0	8.00	10.4	7.57	7.55	7.04	7.63	316		10.4	7.7	9.0	9.1	9.2	14.0	12.5	12.0	12.0	11.5
	2	10	0	0	0	0	0	0	8.14	10.4	7.69	7.60	7.60	7.61	316		10.4		9.0	9.4	9.8	14.0		12.0	12.0	12.0
—	3	10	0	0	0	0	0	0	8.13	10.4	7.66	7.70	7.65	7.63	306		10.4		9.0	9.1	9.8	14.0		12.0	~~12.5~~ 12.0	11.5
1.5	1	10	0	0	0	0	0	0	8.06	10.4	~~7.69~~				310		10.4	7.7	8.6	8.6	9.2	14.0		12.5	12.5	11.5
	2	10	0	0	0	0	0	0		10.4	~~7.69~~ 7.61		7.39		305		10.4		8.9	9.0	9.7	13.0		12.0	12.0	12.5
	3	10	0	0	0	0	0	0		10.4		7.70			305		10.4		9.0	9.5	9.8	14.0		12.0	12.0	12.0
3.0	1	10	0	0	0	0	0	0	8.01	10.5				7.53	591		10.5	7.7	9.1	9.3	9.7	13.0		12.0	11.5	11.5
	2	10	0	0	0	0	0	0		10.4	7.61		7.49		591		10.4		9.0	9.3	9.9	14.0		11.5	11.5	11.5
	3	10	0	0	0	0	0	0		10.4		7.62			564		10.4		9.0	9.0	9.6	14.0		12.0	12.0	11.5
6.0	1	10	0	0	0	0	0	0	8.06	10.4				7.54	1066		10.4	7.7	9.0	9.2	9.2	14.0		12.5	12.5	12.0
	2	10	0	0	0	0	0	0		10.5	7.58		7.6		1033		10.5		9.0	9.0	9.7	14.5		12.5	12.0	11.5
	3	10	0	0	0	0	0	0		10.5		7.63	~~7.68~~ 7.61		1105		10.5		9.2	9.4	9.9	14.5		11.5	11.5	11.5
12.0	1	10	0	0	0	0	0	0	7.73	10.5					720		10.5	7.7	9.2	9.3	9.6	14.0		12.5	12.0	11.5
	2	10	0	0	0	0	0	0		10.4	7.52			7.54			10.4		9.2	9.0	9.6	14.0		11.5	11.5	12.0
	3	10	0	1	0	0	0	~~0~~ 1		10.5		7.56	7.47				10.5		9.0	9.0	9.4	14.5		12.0	12.0	11.5
	1	10	0	10	⊖	—	-	10	7.58	10.5	—	—	-	—		7.25	10.5	-	—	-	-	14.5	-	-	-	—
	2	10	0	10	⊖	—	-	10		10.5	7.71	—	-	—			10.5	—	-	-	—	14.5	-	-	-	—
	3	10	0	10	⊖	—	-	10		10.4	—	—	-	—			10.4	—	-	-	—	14.0	-	-	-	—

Comments: Test temps were 12.0°C, at test initiatives (17°C on 3/7),

Date-
Job I.D.#:

Physical Characteristics of Fish

Comments/Calculations

Fish #	Weight, g	Length. cm
	0.437	3.8
	0.397	3.7
	0.319	3.6
	0.267	3.3
	0.263	3 3
	0.383	3.6
	0.263	3.2
	0.315	3.5
	0.327	3.6
	0.233	3.1
	0.407	3.8
	0.393	3.8
	0.210	3.2
	0.442	3.9
	0.161	2.9
	0.183	3.0
	0.318	3.4
	0.304	3.4
	0.359	3.7
	0.189	3.0
	0.330	3.6
	0.273	3.3
	0.300	3.5
	0.253	3.3
	0.235	3.3
	0.193	3.1
	0.235	3.2
	0.172	3.0
	0.357	3.7
X =	0.294	3.4

Doc ID: O:\CLOM\Port.BRN\LiteSol.BEC\Forms\WaterQty.WBF
Revision #: 1.00
Revision Date: 10/10/95

CHEMICAL ANALYSIS OF WATER

Sample Job # or Dilution Water Batch #	Date/ Initials	HARDNESS						ALKALINITY								SP. COND.
		Titrant Vol.		Fin. - Init.	mLs sample	N EDTA	$CaCO_3$ mg/L	Init. pH	Titrant Vol.		Final pH	Fin. - Init.	mLs Sample	N Acid	$CaCO_3$ mg/L	
		Init.	Fin.						Init.	Fin.						
~~MX960329AS~~ Standard	3/14/96 JE	0.0	24.8	24.8	25	1	9920							0.0197		
MX960329AS Specialty PO3 Control-1	3/14/96 JE	24.8	27.2	2.4	25	1	96	7.41	0.0	6.25	4.56	6.25	100	0.0197	62.0	316 µS
MX960329AS 100ppm-1	3/14/96 JE	27.2 JE	29.7	2.5	25	1	100	7.89	6.3	12.6	4.58	6.3	100	0.0197	62.1	306 µS
MX960329AS SPECIALTY PO3 100 ppm-2	3/14/96 JE	29.7	32.1	2.4	25	1	96	7.62	12.6	18.9	4.53	6.3	100	0.0197	62.1	302 µS
MX960329AS SPECIALTY PO3 100 ppm-3	3/14/96 JE	32.1	34.6	2.5	25	1	100	7.66	18.9	25.1	4.53	6.2	100	0.0197	61.1	318 µS
MX960329AS SPECIALTY PO3 1000 ppm-1	3/14/96 JE	34.6	37.0	2.4	25	1	96	7.45	25.1	31.4	4.50	6.3	100	0.0197	62.1	317 µS
MX960329AS SPECIALTY PO3 1000 ppm-2	3/14/96 JE	37.3	39.7	2.4	25	1	96	7.51	31.4	37.6	4.50	6.2	100	0.0197	61.1	318 µS
MX960329AS SPECIALTY PO3 1000 ppm 3	3/14/96 JE	39.7	42.2	25	25	1	100	7.51	37.7	43.9	4.53	6.2	100	0.0197	61.1	313 µS

EQUATIONS