

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 22, 1994
TO: Larry Maltbey - NCD
FROM: Jim Amrhein - WR/2 JA
SUBJECT: Dioxin Results from North Twin Lake

FILE REF: 3200

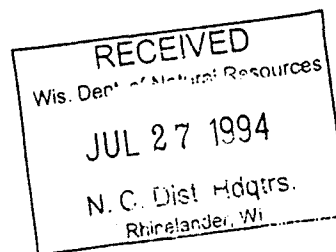
I have just received the results from fish samples collected from North Twin Lake and analyzed for dioxin. I had sent two composites of fish, 3 whole fish white suckers (average length 15.8") and 3 whole fish walleye (average length 19.4") for analysis.

As the enclosed data shows (Table 2), there were minimal detections of 2,3,7,8 substituted dioxin and furans in the samples. These were limited to the hepta-substituted dioxin, which has low dioxin equivalence, and a small amount of furan in the walleye sample.

To put this in perspective, the current fish advisory tolerance level of dioxin equivalents in fillets is 10 parts per trillion (ppt). The whole fish samples of white sucker and walleye contained 0.0156 ppt and 0.0385 ppt dioxin equivalents, respectively (Table 3). As you can see, this is well below the advisory level. I suspect if we had analyzed fillets, the levels would have been even lower.

The good news is that the contamination of Military Creek does not appear to be contaminating feral fish from North Twin Lake with dioxins or furans. Fillet samples of walleye and white sucker will be analyzed for pentachlorophenol at the State Lab of Hygiene. I will also continue to work with Jim Kreitlow on conducting caged fish monitoring in Military Creek itself.

c: Lee Liebenstein - WR/2
Jim Kreitlow - NCD



Analysis for Substituted 2378 Dioxins and Furans

EPA METHOD 8290

Column - DB5 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

R 2658 Pie Ber	2378 *TCDF	2378 TCDF	12378 *PeCDF	23478 *PeCDF	12378 PeCDD	123478 *HxCDF	123678 *HxCDF	234678 *HxCDF	123789 *HxCDF	123478 HxCDD	123678 HxCDD	123789 *HxCDD	1234678 HxCDF	1234789 HxCDF	1234678 HxCDD	OCDF	OCDD
024-9321	ND 0.291	ND 0.326	ND 0.354	ND 0.249	ND 0.363	ND 0.201	ND 0.318	ND 0.214	ND 0.251	ND 0.468	ND 0.407	ND 0.373	ND 0.466	ND 0.748	1.20	ND 0.777	3.91 (white sucker)
024-9322	0.301 0.242	ND 0.274	ND 0.193	ND 0.214	ND 0.148	ND 0.234	ND 0.157	ND 0.185	ND 0.387	ND 0.337	ND 0.309	ND 0.442	ND 0.709	0.573	ND 0.651	2.62 (walling)	
BLANK	ND 0.268	ND 0.469	ND 0.394	ND 0.278	ND 0.527	ND 0.364	ND 0.576	ND 0.387	ND 0.455	ND 0.729	ND 0.634	ND 0.582	ND 0.517	ND 0.830	2.01	ND 1.22	4.66

The designation ND indicates 'None Detected' in excess of the minimum detectable concentration which is listed directly below the ND designation.

These isomers may be convoluted with other isomers of their congener group.

TABLE 3

Wright State University, Dayton, Ohio 45435

Analysis for Substituted 2378 Dioxins and Furans

EPA METHOD 8298

Column - DB5 60M , 0.25u

Concentrations Found (picograms per gram of sample or parts-per-trillion)a.

2,3,7,8 TCDD toxic equivalency for the 17 2,3,7,8 Substituted Isomers

WDNR 2658 Sample Number	Toxic equivalency(TEQ) for each 2,3,7,8 substituted isomer																Total 2,3,7,8 Toxic Equivalency		
	TEF	*TCDF	TCDD	*PeCDF	*PeCDF	PeCDD	*HxCDF	*HxCDF	*HxCDF	*HxCDF	HxCDD	HxCDD	*HxCDD	HpCDF	HpCDF	HpCDD		OCDF	OCDD
645024-9321	ND 0.0291	ND 0.326	ND 0.0177	ND 0.125	ND 0.182	ND 0.0201	ND 0.0318	ND 0.0214	ND 0.0251	ND 0.0468	ND 0.0407	ND 0.0373	ND 0.0047	ND 0.0075	ND 0.0120	ND 0.0008	ND 0.0039	ND 0.0001	0.0159 (0.915)
645024-9322	0.0301	ND 0.242	ND 0.0137	ND 0.0966	ND 0.107	ND 0.0148	ND 0.0234	ND 0.0157	ND 0.0185	ND 0.0387	ND 0.0337	ND 0.0309	ND 0.0044	ND 0.0071	ND 0.0057	ND 0.0007	ND 0.0026	ND 0.0001	0.0385 (0.647)
LAB BLANK	ND 0.0268	ND 0.469	ND 0.0197	ND 0.139	ND 0.264	ND 0.0364	ND 0.0576	ND 0.0387	ND 0.0455	ND 0.0729	ND 0.0634	ND 0.0582	ND 0.0052	ND 0.0083	ND 0.0201	ND 0.0012	ND 0.0047	ND 0.0001	0.0247 (1.31)

- a. The designation ND indicates "None Detected" in excess of the minimum detectable concentration which is listed directly below the ND designation.
- b. This is the sum of all 2,3,7,8 substituted TEQs. The value in parenthesis is the sum of the minimum detectable TEQs of the 2,3,7,8 substituted isomers that were not detected.
- * These isomers may be convoluted with other isomers of their congener group.