RECEIVED 1/65 37 00030

GZA-Donohue

JAN 24 1989

MEMORANDUM

T LAKES & ENVIRONME
SSESSMENT SECTIO

Date: 1/23/88

To: Bill Creal
MDNR

From: Rick Veen
GZA/D

Client:

Job. No. 15697

Subject: Kalamazoo River Data

Enclosed is the PCB data you requested for Lake Allegan, Allegan City, Otsego City and Bryant Mill Pond. Samples of surface sediment were taken in-stream at each of the above listed impoundments except Bryant Mill Pond. Locations are shown on the endosed maps. Sediment samples from each impoundment were first composited then analyzed during batch adsorption experiments. The lab results are for these composite samples and the extract water. The following nomenclature is used to identify sample locations

BMP - Bryant Mill Pond
CO - City of Otsego
CA - City of Allegan
LA & DS - Lake Allegan

Jeff Anderson will be forwarding maps and lab results for the Plainwell, Otsego and Trowbridge areas under separate cover.

Please call if you have any questions about the enclosures.

KB40101437

February 22, 1988

Mr. Gary Williams
83 Grasmere Street
Newton, MA 02158

Dear Mr. Williams:

Enclosed you will find copies of the analytical data for the PCB absorption study performed by TMA/ERG. To aid in the review of this data, I will give you a brief description of what the client's ID's indicate.

The first set of letters indicate the sample location. The next set of numbers indicate the initial weight of sample and volume of extraction. The Designation Dup. A and Dup. B indicate that these particular samples were run in duplicate. The A and B designations indicate parameters measured on the extract water before extraction and after extraction respectively. An example of this ID system is as follows: BMP Comp 1-3 30/1000 Dup. A - A. BMP Comp 1-3 indicates the client sample location. 30/1000 indicates 30 g dry weight extracted with 1000 ml of DI water. Dup. A indicates which replicate this extraction was and - A indicates that the parameters were measured before extraction occurred.

All of the PCB data generated on the solid samples was done so after extraction per our telephone conversation.

If you have any questions concerning these analyses, please do not hesitate to call me.

Respectfully,

Michael E. Dew
GC Lab Manager

cc: Bruce Nelson
Rick Veen

Encl.

Project: A7933

TMA
Thermo Analytical Inc.

Analytical Report

Report Date: 02/19/88

117 N. FIRST ST.
ANN ARBOR, MI 48104 (313) 662-3104

Results by Sample

Prepared for:
GZA/DONOHUE
39605 PLYMOUTH ROAD
PLYMOUTH, MI 48170
Attention: BRUCE NELSON

Client P.O.: KALAMAZOO
Report #: 530
Samples Rec'd: 01-21-88

Approved:
Refer Questions to:
MIKE DEW

**
Residual Samples Will Be Held
For Two Weeks
**

Client ID	BMP COMP 1-3-30/DUP A	BMP COMP 1-3-30/ 1000 DUP A-A	BMP COMP 1-3-30/ 1000 DUP A-B	BMP COMP 1-3-30/DUP B	BMP COMP 1-3-30/ 1000 DUP B-A	BMP COMP 1-3-30/ 1000 DUP B-B
TMA Sample Number	01/181873	01/181874	01/181875	01/181876	01/181877	01/181878
Matrix	SOLID	EP-TOX LEACHATE	EP-TOX LEACHATE	SOLID	EP-TOX LEACHATE	EP-TOX LEACHATE
Parameter						
PCB						
PCB, TOTAL mg/Kg	67	-	0.0012 #	74	-	0.0092 #
PCB 1242 mg/Kg	<15	-	<0.0001 #	<15	-	<0.001 #
PCB 1248 mg/Kg	67	-	0.0012 #	74	-	0.0092 #
PCB 1254 mg/Kg	<15	-	<0.0001 #	<15	-	<0.001 #
PCB 1260 mg/Kg	<15	-	<0.0001 #	<15	-	<0.001 #
SPECIFIC CONDUCTANCE umho/cm	-	530	590	-	580	500
EP-LEACHATE mg/Kg	DONE	-	-	DONE	-	-
OXYGEN, DISSOLVED mg/Kg	-	5.3 #	7.6 #	-	5.2 #	7.0 #
SUSPENDED SOLIDS mg/Kg	-	-	130 #	-	-	120 #
TEMPERATURE degC	-	20.3	23.5	-	20.3	23.5
pH S.U.	-	7.4	7.4	-	7.5	7.4

Client ID	BMP COMP 1-3-10	BMP COMP 1-3-10/1000 A	BMP COMP 1-3-10/1000 B	BMP COMP 1-3-6 48HRS	BMP COMP 1-3-6/- 1000 48 HR-INT	BMP COMP 1-3-6/1000 48HR
TMA Sample Number	01/181879	01/181880	01/181881	01/181882	01/181883	01/181884
Matrix	SOLID	EP-TOX LEACHATE	EP-TOX LEACHATE	SOLID	EP-TOX LEACHATE	EP-TOX LEACHATE
Parameter						
PCB						
PCB, TOTAL mg/Kg	54	-	0.012 #	32	-	0.0056 #
PCB 1242 mg/Kg	<5	-	<0.001 #	<5	-	<0.001 #
PCB 1248 mg/Kg	54	-	0.012 #	32	-	0.0056 #
PCB 1254 mg/Kg	<5	-	<0.001 #	<5	-	<0.001 #
PCB 1260 mg/Kg	<5	-	<0.001 #	<5	-	<0.001 #
SPECIFIC CONDUCTANCE umho/cm	-	560	590	-	590	550
EP-LEACHATE mg/Kg	DONE	-	-	DONE	-	-
OXYGEN, DISSOLVED mg/Kg	-	5.4 #	7.8 #	-	5.3 #	8.2 #
SUSPENDED SOLIDS mg/Kg	-	-	28 #	-	-	10 #
TEMPERATURE degC	-	20.1	23.0	-	20.5	22.3
pH S.U.	-	7.6	7.7	-	7.6	7.7

 See last page for explanation of symbols

CONTINUED

KB401439

TMA
Thermo Analytical Inc.

Analytical Report

Report Date: 19 FEB 1988

KB401440

Client ID	BMP COMP 1-3-6/1000 72HR	BMP COMP 1-3-3	BMP COMP 1-3-3/1000 A	BMP COMP 1-3-3/1000 B	BMP COMP 1-3-1	BMP COMP 1-3-1/1000 A
TMA Sample Number	01/181885	01/181886	01/181887	01/181888	01/181889	01/181890
Matrix	EP-TOX LEACHATE	SOLID	EP-TOX LEACHATE	EP-TOX LEACHATE	SOLID	EP-TOX LEACHATE
Parameter						
PCB						
PCB, TOTAL mg/Kg	0.0015 #	44	-	0.0016 #	56	-
PCB 1242 mg/Kg	<0.0001 #	<5	-	<0.0001 #	<5	-
PCB 1248 mg/Kg	0.0015 #	44	-	0.0016 #	56	-
PCB 1254 mg/Kg	<0.0001 #	<5	-	<0.0001 #	<5	-
PCB 1260 mg/Kg	<0.0001 #	<5	-	<0.0001 #	<5	-
SPECIFIC CONDUCTANCE umho/cm	570	-	540	620	-	580
EP-LEACHATE mg/Kg	-	DONE	-	-	DONE	-
OXYGEN, DISSOLVED mg/Kg	7.7 #	-	5.4 #	8.3 #	-	5.3 #
SUSPENDED SOLIDS mg/Kg	15 #	-	-	11 #	-	-
TEMPERATURE degC	20.0	-	20.5	23.0	-	20.1
pH S.U.	8.0	-	7.7	8.0	-	7.8

Client ID	BMP COMP 1-3-1/1000 B	BMP COMP 1-3-6 72HRS
TMA Sample Number	01/181891	01/182003
Matrix	EP-TOX LEACHATE	SOLID
Parameter		
PCB		
PCB, TOTAL mg/Kg	0.001 #	36
PCB 1242 mg/Kg	<0.0001 #	<5
PCB 1248 mg/Kg	0.001 #	36
PCB 1254 mg/Kg	<0.0001 #	<5
PCB 1260 mg/Kg	<0.0001 #	<5
SPECIFIC CONDUCTANCE umho/cm	580	-
EP-LEACHATE mg/Kg	-	-
OXYGEN, DISSOLVED mg/Kg	8.1 #	-
SUSPENDED SOLIDS mg/Kg	9.2 #	-
TEMPERATURE degC	23.0	-
pH S.U.	8.1	-

Project Comments:

PCB ANALYSIS IS PERFORMED ON SEDIMENT SAMPLES AFTER LEACHATE EXTRACTION IS COMPLETE.

Comments about sample 01/181873
PCB - AVERAGE OF DUPLICATE RUNS HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181876
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181879
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181882
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181886
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181889
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Comments about sample 01/181891
PCB - AVERAGE OF DUPLICATE RUNS
SUSPENDED SOLIDS - AVERAGE OF DUPLICATE RUNS

CONTINUED

TMA
Thermo Analytical Inc.

Analytical Report

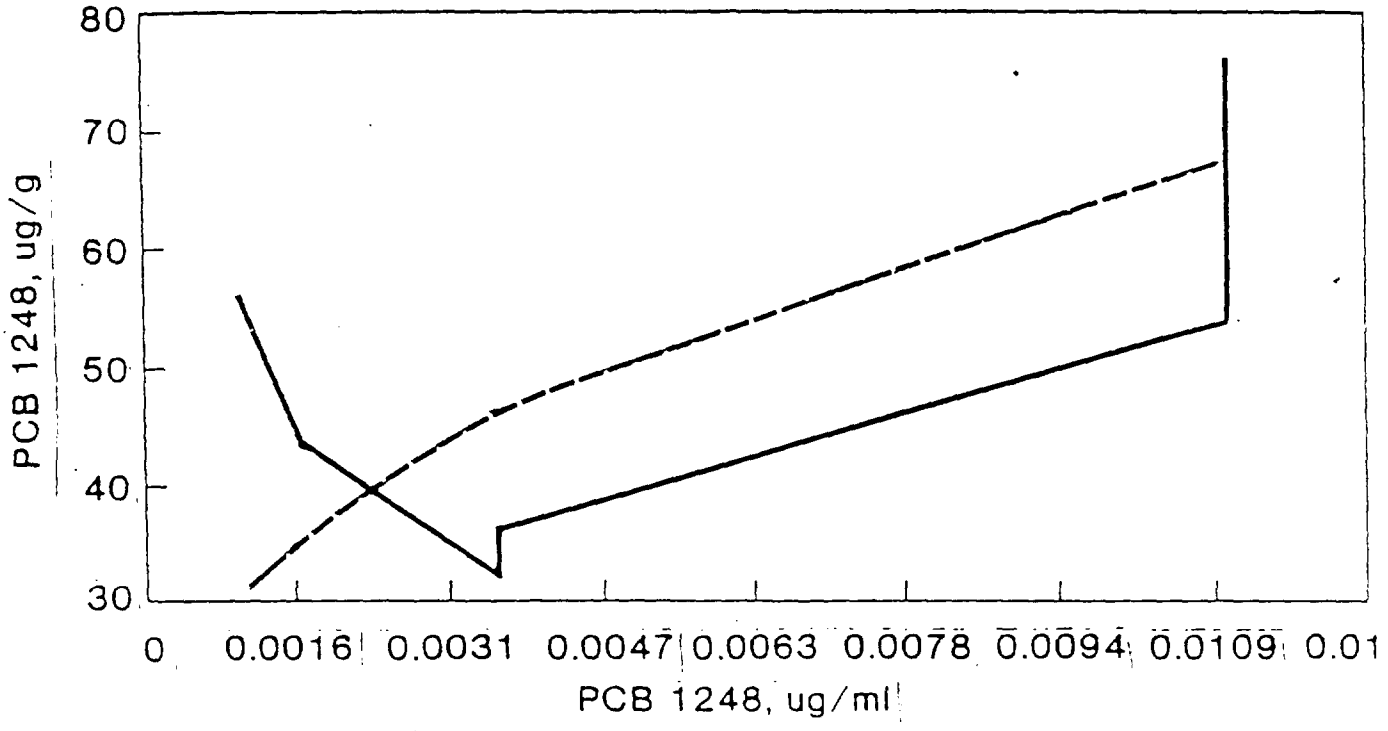
Report Date 19 FEB 1988

Comments about sample 01/182003
PCB - HIGHER DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

Note Results indicated by '#' are in mg/L instead of mg/Kg
FR = See field report for result
NA = Not applicable to test requested
ND = Nondetected, detection limit in ()
SD = Sample damaged

SR = See attached report for result
< = Positive result but at unquantifiable concentration below inicated level
- = Test not requested for this sample.

Bryant Mill Pond



LEGEND

— Measured

-- Fitted

Fitted data are for Kf=300 and n= 3.

GA-Donohue

Adsorption Data for Bryant Mill Pond Sediments

JULY 1988
15275 000

KALAMAZOO RIVER SITE
SEDIMENT BURIAL RATE/PARTITION COEFFICIENT STUDY
KALAMAZOO RIVER, MICHIGAN

A Joint Venture

FIGURE

KB40101442