

**Wisconsin Department of Natural Resources
North Central District**

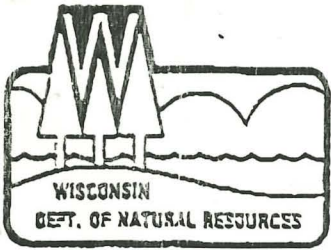
**facsimile
Cover Page**

Date: March 5, 1996

To: Robert Edstrom
Fax: (906) 822-7977

From: M. Scott Watson
Fax: 715-365-8932
Phone: 715-365-8961

Note: Bob, Attached is the data as received from our State Lab. Tom Janisch has several questions and concerns to follow up with the lab about. I would like to move forward from this point into additional investigation. Please contact me once you have had a chance to review the information. -scott



George E. Meyer
Secretary

Bureau of Water Resources Management
P.O. Box 7921
Madison, WI 53707

Fax Number (608) 267-2800
Phone Number (608) 267-7610

Date: March 5, 1996

To: Scott Watson - NCD

Number: 715-36⁹~~5~~-8932

From: Tom Janisch - WR/2

Pages to follow (including cover sheet): 23

Message:

DNR
FLOODPLAIN
SOIL/SED SAMPLE
RESULTS REPORT

The SLOH needs to explain why it was necessary to dilute the sample extracts? Was there interference and if so, from what? Couldn't they have done some cleanup step before analysis before resorting to dilution? The note on their report sheet indicates they were picking up hydrocarbons. Are these compounds causing the interference? Usually the samples had no oily appearance or smell. The DRO values were all less than 10 mg/kg. We will be talking to Ron Anneson in Technical Services and the SLOH to try to get an explanation for what is going on. At \$1200 per sample for analysis, we need this explanation.

C : Lee Liebenstein - WR/2
Jim Amrhein - WR/2
Jim Kreitlew - NCD

SUMMARY OF DATA ON SLOH REPORTS

Military Creek and North Twin Lake

Soil/Sediment Depths Analyzed

FP-1A - 0-6 in.
 FP-2A - 0-3 in.
 FP-2B - 3-8 in.

FP-3A 0-3 in.
 FP-3B 3-8 in.
 NT-2A 19 in.

Sample Site	Pentachlorophenol		Priority Pollutants Base/ Neutral/ Acid	Pesticides	TOC %	DRO (Previously Results)
	Priority Pollutant Scan	1548				
FP-2A	270 mg/kg	14 mg/kg	* * ^{1.}	< LOD ^{2.}	14.4	< 10 mg/kg
FP-2B	26 mg/kg	3.4 mg/kg	* * ^{1.}	< LOD	5.55	< 10 mg/kg
FP-3A	* * ^{1.}	0.45 mg/kg	* * ^{1.}	< LOD	6.26	< 10 mg/kg
FP-3B	* * ^{1.}	0.55 mg/kg	* * ^{1.}	< LOD	2.01	< 10 mg/kg
NT-2A	* * ^{1.}	0.02 mg/kg	* * ^{1.}	< LOD	11.30	NA ³
FP-1A	NA ³	NA ³	NA ³	NA ³	NA ³	< 10 mg/kg

1. LOD not achievable due to dilution
2. Interference reported for 6 pesticides
3. NA - No Analysis

Note that at FP-1, the floodplain reference site, only the top six inches of soil was analyzed for DRO and particle size but not for Organics. The core (19 in.) from North Twin Lake (NT-2A) was analyzed for organics and particle size but not DRO. The analysis of the various samples was based on money available to do the analysis. The assumption was that the organics at the reference site should all be < LOD.

State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706

R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section
Organic chemistry

(608) 262-2797

DNR LAB ID 113133790

Id: 643438 Point/Well/...: 171 Field #: FP-2A Route: WR00

Collection Date: 10/11/95 Time: 11:40 County: 64 (Vilas)

From: MILITARY CREEK COUNTY HIGHWAY E 850 FT UPSTREAM OF CO HWY E

Description: OTHER CORER, FLOODPLAIN SEDIMENT/SOIL ASSESSMENT

To: LINDA TALBOT

DNR GEF II WR/2

Source: Sediment

MADISON

Account number: WR283

Collected by: JANISCH

Waterbody/permit/...: 1623900

Enforcement

Date Received: 10/13/95

Labslip #: OG001183

Reported: 02/26/96

---- test: PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS

ACENAPHTHENE	**	UG/G, DRY #1
ACENAPHTHYLENE	**	UG/G, DRY #1
ANTHRACENE	**	UG/G, DRY #1
BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
BENZO (A) ANTHRACENE	**	UG/G, DRY #1
BENZO (A) PYRENE	**	UG/G, DRY #1
BENZO (B) FLUORANTHENE	**	UG/G, DRY #1
BENZO (G, H, I) PERYLENE	**	UG/G, DRY #1
BENZO (K) FLUORANTHENE	**	UG/G, DRY #1
BENZOIC ACID	**	UG/G, DRY #1
BENZYL ALCOHOL	**	UG/G, DRY #1
BIS (2-CHLOROETHOXY) METHANE	**	UG/G, DRY #1
BIS (2-CHLOROETHYL) ETHER	**	UG/G, DRY #1
BIS (2-CHLOROISOPROPYL) ETHER	**	UG/G, DRY #1
BIS (2-ETHYLHEXYL) PHTHALATE	**	UG/G, DRY #1
4-BROMOPHENYL PHENYL ETHER	**	UG/G, DRY #1
BUTYL BENZYL PHTHALATE	**	UG/G, DRY #1
4-CHLORO-3-METHYLPHENOL	**	UG/G, DRY #1
4-CHLOROANILINE	ND (LOD=NA	UG/G, DRY) #1
2-CHLORONAPHTHALENE	**	UG/G, DRY #1
2-CHLOROPHENOL	**	UG/G, DRY #1
4-CHLOROPHENYL PHENYL ETHER	**	UG/G, DRY #1
CHRYSENE	**	UG/G, DRY #1
DIBENZO (A, H) ANTHRACENE	**	UG/G, DRY #1
DIBENZOFURAN	**	UG/G, DRY #1
1,2 DICHLOROBENZENE	**	UG/G, DRY #1
1,3-DICHLOROBENZENE	**	UG/G, DRY #1
1,4-DICHLOROBENZENE	**	UG/G, DRY #1
3,3'-DICHLOROBENZIDINE	ND (LOD=NA	UG/G, DRY) #1
2,4-DICHLOROPHENOL	**	UG/G, DRY #1

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section

(608) 262-2787

DNR LAB ID 113133790

... continuing Labslip # OG001183,

Field # FP-2A

2,4-DIMETHYLPHENOL	**	UG/G, DRY #1
DIETHYL PHTHALATE	**	UG/G, DRY #1
DIMETHYL PHTHALATE	**	UG/G, DRY #1
DI-N-BUTYL PHTHALATE	**	UG/G, DRY #1
DI-N-OCTYL PHTHALATE	**	UG/G, DRY #1
4,6-DINITRO-2-METHYL PHENOL	**	UG/G, DRY #1
2,4-DINITROPHENOL	**	UG/G, DRY #1
2,4-DINITROTOLUENE	**	UG/G, DRY #1
2,6-DINITROTOLUENE	**	UG/G, DRY #1
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	ND (LOD=NA	UG/G, DRY) #1
FLUORANTHENE	**	UG/G, DRY #1
FLUORENE	**	UG/G, DRY #1
HEXACHLOROBENZENE	**	UG/G, DRY #1
HEXACHLOROBUTADIENE	**	UG/G, DRY #1
HEXACHLOROCYCLOPENTADIENE	ND (LOD=NA	UG/G, DRY) #1
HEXACHLOROETHANE	**	UG/G, DRY #1
INDENO (1,2,3-CD) PYRENE	**	UG/G, DRY #1
ISOPHORONE	**	UG/G, DRY #1
2-METHYLNAPHTHALENE	**	UG/G, DRY #1
2-METHYLPHENOL	**	UG/G, DRY #1
4-METHYLPHENOL	**	UG/G, DRY #1
NAPHTHALENE	**	UG/G, DRY #1
2-NITROANILINE	**	UG/G, DRY #1
3-NITROANILINE	ND (LOD=NA	UG/G, DRY) #1
4-NITROANILINE	**	UG/G, DRY #1
NITROBENZENE	**	UG/G, DRY #1
2-NITROPHENOL	**	UG/G, DRY #1
4-NITROPHENOL	**	UG/G, DRY #1
N-NITROSODIMETHYLAMINE	**	UG/G, DRY #1
N-NITROSO-DI-N-PROPYLAMINE	**	UG/G, DRY #1
N-NITROSODIPHENYLAMINE	**	UG/G, DRY #1
PENTACHLOROPHENOL	+ 270.	UG/G, DRY #1
PHENANTHRENE	**	UG/G, DRY #1
PHENOL	**	UG/G, DRY #1
PYRENE	**	UG/G, DRY #1
1,2,4-TRICHLOROENZENE	**	UG/G, DRY #1
2,4,5-TRICHLOROPHENOL	**	UG/G, DRY #1
2,4,6-TRICHLOROPHENOL	**	UG/G, DRY #1

---- test: TEMPERATURE - 0950
TEMPERATURE

+ 17

---- test: PESTICIDE RESIDUE IN SOIL - CHLORDANES - 1510

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Environmental Science Section

(608) 262-2797

DNR LAB ID 113133790

... continuing Labslip # OG001183,

Field # FP-2A

CIS-CHLORDANE	<0.01	UG/G, DRY
TRANS-CHLORDANE	<0.01	UG/G, DRY
CIS-NONACHLOR	<0.01	UG/G, DRY
TRANS-NONACHLOR	<0.01	UG/G, DRY
---- test: PEST. RESIDUE IN SOIL - op-DDD, op-DDE, op-DDT		
op-DDD	<0.01	UG/G, DRY
op-DDE	<0.01	UG/G, DRY
op-DDT	<0.01	UG/G, DRY
---- test: PESTICIDE RESIDUE IN SOIL - METHOXYCHLOR		
METHOXYCHLOR	<0.05	UG/G, DRY
---- test: PESTICIDE RESIDUE - HEXACHLORO BENZENE		
HEXACHLORO BENZENE	+ 0.02	UG/G, DRY
---- test: CHLOROPHENOLS IN SOILS - 1540		
2,4,6-TRICHLOROPHENOL	<0.10	UG/G, DRY
2,4,5-TRICHLOROPHENOL	<0.10	UG/G, DRY
PENTACHLOROPHENOL (PCP)	+ 14.	UG/G, DRY
PHENOLS EXTRACTION/DERIVATIZATION	C	
---- test: TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD		
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD +	144000.	UG/G, DRY
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY - PREP	C	
PRIORITY POLLUTANTS - SOIL/SEDIMENT PREPARATION	C	
---- test: PRIORITY POLLUTANTS -SOIL/SEDIMENT - PESTS - 1571		
ALDRIN	<0.01	UG/G, DRY #2
ALPHA-BHC	<0.01	UG/G, DRY #2
BETA-BHC	<0.01	UG/G, DRY #2
DELTA-BHC	<0.01	UG/G, DRY #2
GAMMA-BHC	<0.01	UG/G, DRY #2
CHLORDANE	<0.05	UG/G, DRY #2
pp-DDD	<0.01	UG/G, DRY #2
pp-DDE	<0.01	UG/G, DRY #2
pp-DDT	<0.01	UG/G, DRY #2
DIELDRIN	*I<0.05	UG/G, DRY #2
ENDOSULFAN I	*I<0.05	UG/G, DRY #2
ENDOSULFAN II	*I<0.05	UG/G, DRY #2
ENDOSULFAN SULFATE	*I<0.05	UG/G, DRY #2
ENDRIN	*I<0.05	UG/G, DRY #2
ENDRIN ALDEHYDE	*I<0.05	UG/G, DRY #2
HEPTACHLOR	<0.01	UG/G, DRY #2
HEPTACHLOR EPOXIDE	<0.01	UG/G, DRY #2
TOXAPHENE LIKE COMPOUND	<1.	UG/G, DRY #2

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
...continuing Labslip # OG001183, Field # FP-2A

---- test: PRIORITY POLLUTANTS IN SOIL/SEDIMENT - PCBS - 1571
AROCOR TOTAL *I<0.10 UG/G, DRY #3
PRIORITY POLLUTANTS - SOIL/SEDIMENT-PESTS/PCB PREP C

--- Footnotes ---

+: Positive results are prefixed by a plus sign.

Remark #1: SEE OG001183.MM1

Remark #2: INTERFERENCE INDICATED BY *I.

Remark #3: INTERFERENCE INDICATED BY *I.

Memo for OG001183

--- OG001183.MM1 - PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS ---

State Laboratory of Hygiene sample OG001183 may contain the compounds listed below according to tentative computer identification from gas chromatography/mass spectroscopy analysis. The concentration of contaminants could not be determined, nor has the presence of the compounds been confirmed by alternative analysis techniques.

hydrocarbons

The following qualifier exists for the data that is reported.
LOD not achievable due to dilution indicated by **.

If you have any questions, contact David Degenhardt at (608) 262-2797.

5.

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section
Organic chemistry

(608) 262-2797

DNR LAB ID 113133790

Id: 643438 Point/Well/...: 171 Field # FP-2B Route: WR00

Collection Date: 10/11/95 Time: 11:50 County: 64 (Vilas)

From: MILITARY CREEK COUNTY HIGHWAY E 850 FT UPSTREAM OF CO HWY E

Description: OTHER CORER, FLOODPLAIN SEDIMENT/SOIL ASSESSMENT

To: LINDA TALBOT

DNR GEF II WR/2

Source: Sediment

MADISON

Account number: WR283

Collected by: JANISCH

Waterbody/permit/...: 1623900

Enforcement

Date Received: 10/13/95

Labslip #: OG001184

Reported: 02/26/96

----- test: PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS

ACENAPHTHENE	**	UG/G, DRY #1
ACENAPHTHYLENE	**	UG/G, DRY #1
ANTHRACENE	**	UG/G, DRY #1
BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
BENZO (A) ANTHRACENE	**	UG/G, DRY #1
BENZO (A) PYRENE	**	UG/G, DRY #1
BENZO (B) FLUORANTHENE	**	UG/G, DRY #1
BENZO (G, H, I) PERYLENE	**	UG/G, DRY #1
BENZO (K) FLUORANTHENE	**	UG/G, DRY #1
BENZOIC ACID	**	UG/G, DRY #1
BENZYL ALCOHOL	**	UG/G, DRY #1
BIS (2-CHLOROETHOXY) METHANE	**	UG/G, DRY #1
BIS (2-CHLOROETHYL) ETHER	**	UG/G, DRY #1
BIS (2-CHLOROISOPROPYL) ETHER	**	UG/G, DRY #1
BIS (2-ETHYLHEXYL) PHTHALATE	**	UG/G, DRY #1
4-BROMOPHENYL PHENYL ETHER	**	UG/G, DRY #1
BUTYL BENZYL PHTHALATE	**	UG/G, DRY #1
4-CHLORO-3-METHYLPHENOL	**	UG/G, DRY #1
4-CHLOROANILINE	ND (LOD=NA	UG/G, DRY) #1
2-CHLORONAPHTHALENE	**	UG/G, DRY #1
2-CHLOROPHENOL	**	UG/G, DRY #1
4-CHLOROPHENYL PHENYL ETHER	**	UG/G, DRY #1
CHRYSENE	**	UG/G, DRY #1
DIBENZO (A, H) ANTHRACENE	**	UG/G, DRY #1
DIBENZOFURAN	**	UG/G, DRY #1
1, 2 DICHLOROBENZENE	**	UG/G, DRY #1
1, 3-DICHLOROBENZENE	**	UG/G, DRY #1
1, 4-DICHLOROBENZENE	**	UG/G, DRY #1
3, 3'-DICHLOROBENZIDINE	ND (LOD=NA	UG/G, DRY) #1
2, 4-DICHLOROPHENOL	**	UG/G, DRY #1

6.

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465 Henry Mall, Madison, WI 53706

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section

(608) 262-2797

DNR LAB ID 113133790

... continuing Labslip # OG001184,

Field # FP-2B

2,4-DIMETHYLPHENOL	**	UG/G, DRY #1
DIETHYL PHTHALATE	**	UG/G, DRY #1
DIMETHYL PHTHALATE	**	UG/G, DRY #1
DI-N-BUTYL PHTHALATE	**	UG/G, DRY #1
DI-N-OCTYL PHTHALATE	**	UG/G, DRY #1
4,6-DINITRO-2-METHYL PHENOL	**	UG/G, DRY #1
2,4-DINITROPHENOL	**	UG/G, DRY #1
2,4-DINITROTOLUENE	**	UG/G, DRY #1
2,6-DINITROTOLUENE	**	UG/G, DRY #1
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	ND (LOD=NA	UG/G, DRY) #1
FLUORANTHENE	**	UG/G, DRY #1
FLUORENE	**	UG/G, DRY #1
HEXACHLOROBENZENE	**	UG/G, DRY #1
HEXACHLOROBUTADIENE	**	UG/G, DRY #1
HEXACHLOROCYCLOPENTADIENE	ND (LOD=NA	UG/G, DRY) #1
HEXACHLOROETHANE	**	UG/G, DRY #1
INDENO (1,2,3-CD) PYRENE	**	UG/G, DRY #1
ISOPHORONE	**	UG/G, DRY #1
2-METHYLNAPHTHALENE	**	UG/G, DRY #1
2-METHYLPHENOL	**	UG/G, DRY #1
4-METHYLPHENOL	**	UG/G, DRY #1
NAPHTHALENE	**	UG/G, DRY #1
2-NITROANILINE	**	UG/G, DRY #1
3-NITROANILINE	ND (LOD=NA	UG/G, DRY) #1
4-NITROANILINE	**	UG/G, DRY #1
NITROBENZENE	**	UG/G, DRY #1
2-NITROPHENOL	**	UG/G, DRY #1
4-NITROPHENOL	**	UG/G, DRY #1
N-NITROSODIMETHYLAMINE	**	UG/G, DRY #1
N-NITROSO-DI-N-PROPYLAMINE	**	UG/G, DRY #1
N-NITROSODIPHENYLAMINE	**	UG/G, DRY #1
PENTACHLOROPHENOL	+ 26.	UG/G, DRY #1
PHENANTHRENE	**	UG/G, DRY #1
PHENOL	**	UG/G, DRY #1
PYRENE	**	UG/G, DRY #1
1,2,4-TRICHLOROBENZENE	**	UG/G, DRY #1
2,4,5-TRICHLOROPHENOL	**	UG/G, DRY #1
2,4,6-TRICHLOROPHENOL	**	UG/G, DRY #1

---- test: TEMPERATURE - 0950
TEMPERATURE

+ 17

---- test: PESTICIDE RESIDUE IN SOIL - CHLORDANES - 1510

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001184, Field # FP-2B

CIS-CHLORDANE	<0.01	UG/G, DRY
TRANS-CHLORDANE	<0.01	UG/G, DRY
CIS-NONACHLOR	<0.01	UG/G, DRY
TRANS-NONACHLOR	<0.01	UG/G, DRY

---- test: PEST. RESIDUE IN SOIL - op-DDD, op-DDE, op-DDT

op-DDD	<0.01	UG/G, DRY
op-DDE	<0.01	UG/G, DRY
op-DDT	<0.01	UG/G, DRY

---- test: PESTICIDE RESIDUE IN SOIL - METHOXYCHLOR

METHOXYCHLOR	<0.05	UG/G, DRY
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---- test: PESTICIDE RESIDUE - HEXACHLORO BENZENE

HEXACHLORO BENZENE	<0.01	UG/G, DRY
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---- test: CHLOROPHENOLS IN SOILS - 1540

2,4,6-TRICHLOROPHENOL	<0.10	UG/G, DRY
2,4,5-TRICHLOROPHENOL	<0.10	UG/G, DRY
PENTACHLOROPHENOL (PCP)	+ 3.4	UG/G, DRY
PHENOLS EXTRACTION/DERIVATIZATION	C	

---- test: TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD

TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD + 55500.		UG/G, DRY
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY - PREP	C	
PRIORITY POLLUTANTS - SOIL/SEDIMENT PREPARATION	C	

---- test: PRIORITY POLLUTANTS -SOIL/SEDIMENT - PESTS - 1571

ALDRIN	<0.01	UG/G, DRY
ALPHA-BHC	<0.01	UG/G, DRY
BETA-BHC	<0.01	UG/G, DRY
DELTA-BHC	<0.01	UG/G, DRY
GAMMA-BHC	<0.01	UG/G, DRY

CHLORDANE	<0.05	UG/G, DRY
pp-DDD	<0.01	UG/G, DRY
pp-DDE	<0.01	UG/G, DRY
pp-DDT	<0.01	UG/G, DRY
DIELDRIN	<0.01	UG/G, DRY

ENDOSULFAN I	<0.01	UG/G, DRY
ENDOSULFAN II	<0.02	UG/G, DRY
ENDOSULFAN SULFATE	<0.02	UG/G, DRY
ENDRIN	<0.01	UG/G, DRY
ENDRIN ALDEHYDE	<0.02	UG/G, DRY

HEPTACHLOR	<0.01	UG/G, DRY
HEPTACHLOR EPOXIDE	<0.01	UG/G, DRY
TOXAPHENE LIKE COMPOUND	<1.	UG/G, DRY

8.

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001184, Field # FP-2B

---- test: PRIORITY POLLUTANTS IN SOIL/SEDIMENT - PCBS - 1571
AROCLOR TOTAL <0.05 UG/G, DRY
PRIORITY POLLUTANTS - SOIL/SEDIMENT-PESTS/PCB PREP C

--- Footnotes ---

+: Positive results are prefixed by a plus sign.

Remark #1: SEE OG001184.MM1

Memo for OG001184

--- OG001184.MM1 - PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS ---

State Laboratory of Hygiene sample OG001184 may contain the compounds listed below according to tentative computer identification from gas chromatography/mass spectroscopy analysis. The concentration of contaminants could not be determined, nor has the presence of the compounds been confirmed by alternative analysis techniques.

hydrocarbons

The following qualifier exists for the data that is reported.
LOD not achievable due to dilution indicated by **.

If you have any questions, contact David Degenhardt at (608) 262-2797.

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Organic chemistry

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DNR LAB ID 113133790

Id: 643439 Point/Well/...: 171 Field #: FP-3A Route: WR00

Collection Date: 10/11/95 Time: 12:20 County: 64 (Vilas)

From: MILITARY CREEK COUNTY HIGHWAY E 400 FT UPSTREAM OF CTY HWY E

Description: OTHER CORER, FLOODPLAIN SEDIMENT/SOIL ASSESSMENT

To: LINDA TALBOT

DNR GEF II WR/2

Source: Sediment

MADISON

Account number: WR283

Collected by: JANISCH

Waterbody/permit/...: 1623900

Enforcement

Date Received: 10/13/95

Labslip #: OG001185

Reported: 02/26/96

---- test: PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS

ACENAPHTHENE	**	UG/G, DRY #1
ACENAPHTHYLENE	**	UG/G, DRY #1
ANTHRACENE	**	UG/G, DRY #1
BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
BENZO (A) ANTHRACENE	**	UG/G, DRY #1
BENZO (A) PYRENE	**	UG/G, DRY #1
BENZO (B) FLUORANTHENE	**	UG/G, DRY #1
BENZO (G, H, I) PERYLENE	**	UG/G, DRY #1
BENZO (K) FLUORANTHENE	**	UG/G, DRY #1
BENZOIC ACID	**	UG/G, DRY #1
BENZYL ALCOHOL	**	UG/G, DRY #1
BIS (2-CHLOROETHOXY) METHANE	**	UG/G, DRY #1
BIS (2-CHLOROETHYL) ETHER	**	UG/G, DRY #1
BIS (2-CHLOROISOPROPYL) ETHER	**	UG/G, DRY #1
BIS (2-ETHYLHEXYL) PHTHALATE	**	UG/G, DRY #1
4-BROMOPHENYL PHENYL ETHER	**	UG/G, DRY #1
BUTYL BENZYL PHTHALATE	**	UG/G, DRY #1
4-CHLORO-3-METHYLPHENOL	**	UG/G, DRY #1
4-CHLOROANILINE	ND (LOD=NA	UG/G, DRY) #1
2-CHLORONAPHTHALENE	**	UG/G, DRY #1
2-CHLOROPHENOL	**	UG/G, DRY #1
4-CHLOROPHENYL PHENYL ETHER	**	UG/G, DRY #1
CHRYSENE	**	UG/G, DRY #1
DIBENZO (A, H) ANTHRACENE	**	UG/G, DRY #1
DIBENZOFURAN	**	UG/G, DRY #1
1, 2 DICHLOROBENZENE	**	UG/G, DRY #1
1, 3-DICHLOROBENZENE	**	UG/G, DRY #1
1, 4-DICHLOROBENZENE	**	UG/G, DRY #1
3, 3'-DICHLOROBENZIDINE	ND (LOD=NA	UG/G, DRY) #1
2, 4-DICHLOROPHENOL	**	UG/G, DRY #1

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State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706

R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section

(608) 262-2797

DNR LAB ID 113133790

... continuing Labslip # OG001185,

Field # FP-3A

2,4-DIMETHYLPHENOL	**	UG/G, DRY #1
DIETHYL PHTHALATE	**	UG/G, DRY #1
DIMETHYL PHTHALATE	**	UG/G, DRY #1
DI-N-BUTYL PHTHALATE	**	UG/G, DRY #1
DI-N-OCTYL PHTHALATE	**	UG/G, DRY #1
4,6-DINITRO-2-METHYL PHENOL	**	UG/G, DRY #1
2,4-DINITROPHENOL	**	UG/G, DRY #1
2,4-DINITROTOLUENE	**	UG/G, DRY #1
2,6-DINITROTOLUENE	**	UG/G, DRY #1
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	ND (LOD=NA	UG/G, DRY) #1
FLUORANTHENE	**	UG/G, DRY #1
FLUORENE	**	UG/G, DRY #1
HEXACHLOROBENZENE	**	UG/G, DRY #1
HEXACHLOROBUTADIENE	**	UG/G, DRY #1
HEXACHLOROCYCLOPENTADIENE	ND (LOD=NA	UG/G, DRY) #1
HEXACHLOROETHANE	**	UG/G, DRY #1
INDENO (1,2,3-CD) PYRENE	**	UG/G, DRY #1
ISOPHORONE	**	UG/G, DRY #1
2-METHYLNAPHTHALENE	**	UG/G, DRY #1
2-METHYLPHENOL	**	UG/G, DRY #1
4-METHYLPHENOL	**	UG/G, DRY #1
NAPHTHALENE	**	UG/G, DRY #1
2-NITROANILINE	**	UG/G, DRY #1
3-NITROANILINE	ND (LOD=NA	UG/G, DRY) #1
4-NITROANILINE	**	UG/G, DRY #1
NITROBENZENE	**	UG/G, DRY #1
2-NITROPHENOL	**	UG/G, DRY #1
4-NITROPHENOL	**	UG/G, DRY #1
N-NITROSODIMETHYLAMINE	**	UG/G, DRY #1
N-NITROSO-DI-N-PROPYLAMINE	**	UG/G, DRY #1
N-NITROSODIPHENYLAMINE	**	UG/G, DRY #1
PENTACHLOROPHENOL	**	UG/G, DRY #1
PHENANTHRENE	**	UG/G, DRY #1
PHENOL	**	UG/G, DRY #1
PYRENE	**	UG/G, DRY #1
1,2,4-TRICHLOROBENZENE	**	UG/G, DRY #1
2,4,5-TRICHLOROPHENOL	**	UG/G, DRY #1
2,4,6-TRICHLOROPHENOL	**	UG/G, DRY #1

---- test: TEMPERATURE - 0950
TEMPERATURE

+ 17

---- test: PESTICIDE RESIDUE IN SOIL - CHLORDANES - 1510

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001185, Field # FP-3A

CIS-CHLORDANE	<0.01	UG/G, DRY
TRANS-CHLORDANE	<0.01	UG/G, DRY
CIS-NONACHLOR	<0.01	UG/G, DRY
TRANS-NONACHLOR	<0.01	UG/G, DRY

---- test: PEST. RESIDUE IN SOIL - op-DDD, op-DDE, op-DDT

op-DDD	<0.01	UG/G, DRY
op-DDE	<0.01	UG/G, DRY
op-DDT	<0.01	UG/G, DRY

---- test: PESTICIDE RESIDUE IN SOIL - METHOXYCHLOR

METHOXYCHLOR	<0.05	UG/G, DRY
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---- test: PESTICIDE RESIDUE - HEXACHLORO BENZENE

HEXACHLORO BENZENE	<0.01	UG/G, DRY
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---- test: CHLOROPHENOLS IN SOILS - 1540

2,4,6-TRICHLOROPHENOL	<0.10	UG/G, DRY
2,4,5-TRICHLOROPHENOL	<0.10	UG/G, DRY
PENTACHLOROPHENOL (PCP)	+ 0.45	UG/G, DRY
PHENOLS EXTRACTION/DERIVATIZATION	C	

---- test: TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD

TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD +	62600.	UG/G, DRY
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY - PREP	C	
PRIORITY POLLUTANTS - SOIL/SEDIMENT PREPARATION	C	

---- test: PRIORITY POLLUTANTS -SOIL/SEDIMENT - PESTS - 1571

ALDRIN	<0.01	UG/G, DRY
ALPHA-BHC	<0.01	UG/G, DRY
BETA-BHC	<0.01	UG/G, DRY
DELTA-BHC	<0.01	UG/G, DRY
GAMMA-BHC	<0.01	UG/G, DRY

CHLORDANE	<0.05	UG/G, DRY
pp-DDD	<0.01	UG/G, DRY
pp-DDE	<0.01	UG/G, DRY
pp-DDT	<0.01	UG/G, DRY
DIELDRIN	<0.01	UG/G, DRY

ENDOSULFAN I	<0.01	UG/G, DRY
ENDOSULFAN II	<0.02	UG/G, DRY
ENDOSULFAN SULFATE	<0.02	UG/G, DRY
ENDRIN	<0.01	UG/G, DRY
ENDRIN ALDEHYDE	<0.02	UG/G, DRY

HEPTACHLOR	<0.01	UG/G, DRY
HEPTACHLOR EPOXIDE	<0.01	UG/G, DRY
TOXAPHENE LIKE COMPOUND	<1.	UG/G, DRY

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State Laboratory of Hygiene
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R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001185, Field # FP-3A

---- test: PRIORITY POLLUTANTS IN SOIL/SEDIMENT - PCBS - 1571
AROCOR TOTAL <0.05 UG/G, DRY
PRIORITY POLLUTANTS - SOIL/SEDIMENT-PESTS/PCB PREP C

--- Footnotes ---

+: Positive results are prefixed by a plus sign.

Remark #1: SEE OG001185.MM1

Memo for OG001185

--- OG001185.MM1 - PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS ---

State Laboratory of Hygiene sample OG001185 may contain the compounds listed below according to tentative computer identification from gas chromatography/mass spectroscopy analysis. The concentration of contaminants could not be determined, nor has the presence of the compounds been confirmed by alternative analysis techniques.

hydrocarbons

The following qualifier exists for the data that is reported.
LOD not achievable due to dilution indicated by **.

If you have any questions, contact David Degenhardt at (608) 262-2797.

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State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
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R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section
Organic chemistry

(608) 262-2797

DNR LAB ID 113133790

Id: 643439 Point/Well/...: 171 Field #: FP-3B Route: WR00

Collection Date: 10/11/95 Time: 12:30 County: 64 (Vilas)

From: MILITARY CREEK COUNTY HIGHWAY E 400 FT UPSTREAM OF CTY HWY E

Description: OTHER CORER, FLOODPLAIN SEDIMENT/SOIL ASSESSMENT

To: LINDA TALBOT

DNR GEF II WR/2

Source: Sediment

MADISON

Account number: WR283

Collected by: JANISCH

Waterbody/permit/...: 1623900

Enforcement

Date Received: 10/13/95

Labslip #: OG001186

Reported: 02/26/96

---- test: PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS

ACENAPHTHENE	**	UG/G, DRY #1
ACENAPHTHYLENE	**	UG/G, DRY #1
ANTHRACENE	**	UG/G, DRY #1
BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
BENZO (A) ANTHRACENE	**	UG/G, DRY #1
BENZO (A) PYRENE	**	UG/G, DRY #1
BENZO (B) FLUORANTHENE	**	UG/G, DRY #1
BENZO (G, H, I) PERYLENE	**	UG/G, DRY #1
BENZO (K) FLUORANTHENE	**	UG/G, DRY #1
BENZOIC ACID	**	UG/G, DRY #1
BENZYL ALCOHOL	**	UG/G, DRY #1
BIS (2-CHLOROETHOXY) METHANE	**	UG/G, DRY #1
BIS (2-CHLOROETHYL) ETHER	**	UG/G, DRY #1
BIS (2-CHLOROISOPROPYL) ETHER	**	UG/G, DRY #1
BIS (2-ETHYLHEXYL) PHTHALATE	**	UG/G, DRY #1
4-BROMOPHENYL PHENYL ETHER	**	UG/G, DRY #1
BUTYL BENZYL PHTHALATE	**	UG/G, DRY #1
4-CHLORO-3-METHYLPHENOL	**	UG/G, DRY #1
4-CHLOROANILINE	ND (LOD=NA	UG/G, DRY) #1
2-CHLORONAPHTHALENE	**	UG/G, DRY #1
2-CHLOROPHENOL	**	UG/G, DRY #1
4-CHLOROPHENYL PHENYL ETHER	**	UG/G, DRY #1
CHRYSENE	**	UG/G, DRY #1
DIBENZO (A, H) ANTHRACENE	**	UG/G, DRY #1
DIBENZOFURAN	**	UG/G, DRY #1
1, 2 DICHLORO BENZENE	**	UG/G, DRY #1
1, 3-DICHLORO BENZENE	**	UG/G, DRY #1
1, 4-DICHLORO BENZENE	**	UG/G, DRY #1
3, 3'-DICHLORO BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
2, 4-DICHLORO PHENOL	**	UG/G, DRY #1

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001186, Field # FP-3B

2,4-DIMETHYLPHENOL	**	UG/G, DRY #1
DIETHYL PHTHALATE	**	UG/G, DRY #1
DIMETHYL PHTHALATE	**	UG/G, DRY #1
DI-N-BUTYL PHTHALATE	**	UG/G, DRY #1
DI-N-OCTYL PHTHALATE	**	UG/G, DRY #1
4,6-DINITRO-2-METHYL PHENOL	**	UG/G, DRY #1
2,4-DINITROPHENOL	**	UG/G, DRY #1
2,4-DINITROTOLUENE	**	UG/G, DRY #1
2,6-DINITROTOLUENE	**	UG/G, DRY #1
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	ND (LOD=NA	UG/G, DRY) #1
FLUORANTHENE	**	UG/G, DRY #1
FLUORENE	**	UG/G, DRY #1
HEXACHLOROBENZENE	**	UG/G, DRY #1
HEXACHLOROBUTADIENE	**	UG/G, DRY #1
HEXACHLOROCYCLOPENTADIENE	ND (LOD=NA	UG/G, DRY) #1
HEXACHLOROETHANE	**	UG/G, DRY #1
INDENO (1,2,3-CD) PYRENE	**	UG/G, DRY #1
ISOPHORONE	**	UG/G, DRY #1
2-METHYLNAPHTHALENE	**	UG/G, DRY #1
2-METHYLPHENOL	**	UG/G, DRY #1
4-METHYLPHENOL	**	UG/G, DRY #1
NAPHTHALENE	**	UG/G, DRY #1
2-NITROANILINE	**	UG/G, DRY #1
3-NITROANILINE	ND (LOD=NA	UG/G, DRY) #1
4-NITROANILINE	**	UG/G, DRY #1
NITROBENZENE	**	UG/G, DRY #1
2-NITROPHENOL	**	UG/G, DRY #1
4-NITROPHENOL	**	UG/G, DRY #1
N-NITROSODIMETHYLAMINE	**	UG/G, DRY #1
N-NITROSO-DI-N-PROPYLAMINE	**	UG/G, DRY #1
N-NITROSODIPHENYLAMINE	**	UG/G, DRY #1
PENTACHLOROPHENOL	**	UG/G, DRY #1
PHENANTHRENE	**	UG/G, DRY #1
PHENOL	**	UG/G, DRY #1
PYRENE	**	UG/G, DRY #1
1,2,4-TRICHLOROBENZENE	**	UG/G, DRY #1
2,4,5-TRICHLOROPHENOL	**	UG/G, DRY #1
2,4,6-TRICHLOROPHENOL	**	UG/G, DRY #1

---- test: TEMPERATURE - 0950
TEMPERATURE

+ 17

---- test: PESTICIDE RESIDUE IN SOIL - CHLORDANES - 1510

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State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706

R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001186, Field # FP-3B

CIS-CHLORDANE	<0.01	UG/G, DRY
TRANS-CHLORDANE	<0.01	UG/G, DRY
CIS-NONACHLOR	<0.01	UG/G, DRY
TRANS-NONACHLOR	<0.01	UG/G, DRY

---- test: PEST. RESIDUE IN SOIL - op-DDD, op-DDE, op-DDT		
op-DDD	<0.01	UG/G, DRY
op-DDE	<0.01	UG/G, DRY
op-DDT	<0.01	UG/G, DRY

---- test: PESTICIDE RESIDUE IN SOIL - METHOXYCHLOR		
METHOXYCHLOR	<0.05	UG/G, DRY

---- test: PESTICIDE RESIDUE - HEXACHLORO BENZENE		
HEXACHLORO BENZENE	<0.01	UG/G, DRY

---- test: CHLOROPHENOLS IN SOILS - 1540		
2,4,6-TRICHLOROPHENOL	<0.10	UG/G, DRY
2,4,5-TRICHLOROPHENOL	<0.10	UG/G, DRY
PENTACHLOROPHENOL (PCP)	+ 0.55	UG/G, DRY
PHENOLS EXTRACTION/DERIVATIZATION	C	

---- test: TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD		
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD + 20100.		UG/G, DRY
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY - PREP	C	
PRIORITY POLLUTANTS - SOIL/SEDIMENT PREPARATION	C	

---- test: PRIORITY POLLUTANTS -SOIL/SEDIMENT - PESTS - 1571		
ALDRIN	<0.01	UG/G, DRY
ALPHA-BHC	<0.01	UG/G, DRY
BETA-BHC	<0.01	UG/G, DRY
DELTA-BHC	<0.01	UG/G, DRY
GAMMA-BHC	<0.01	UG/G, DRY

CHLORDANE	<0.05	UG/G, DRY
pp-DDD	<0.01	UG/G, DRY
pp-DDE	<0.01	UG/G, DRY
pp-DDT	<0.01	UG/G, DRY
DIELDRIN	<0.01	UG/G, DRY

ENDOSULFAN I	<0.01	UG/G, DRY
ENDOSULFAN II	<0.02	UG/G, DRY
ENDOSULFAN SULFATE	<0.02	UG/G, DRY
ENDRIN	<0.01	UG/G, DRY
ENDRIN ALDEHYDE	<0.02	UG/G, DRY

HEPTACHLOR	<0.01	UG/G, DRY
HEPTACHLOR EPOXIDE	<0.01	UG/G, DRY
TOXAPHENE LIKE COMPOUND	<1.	UG/G, DRY

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State Laboratory of Hygiene
 University of Wisconsin Center for Health Sciences
 465 Henry Mall, Madison, WI 53706

R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

 Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
 ... continuing Labslip # OG001186, Field # FP-3B

---- test: PRIORITY POLLUTANTS IN SOIL/SEDIMENT - PCBS - 1571
 AROCLOR TOTAL <0.05 UG/G, DRY
 PRIORITY POLLUTANTS - SOIL/SEDIMENT-PESTS/PCB PREP C

--- Footnotes ---

+: Positive results are prefixed by a plus sign.

Remark #1: SEE OG001186.MM1

Memo for OG001186

--- OG001186.MM1 - PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS ---

State Laboratory of Hygiene sample OG001186 may contain the compounds listed below according to tentative computer identification from gas chromatography/mass spectroscopy analysis. The concentration of contaminants could not be determined, nor has the presence of the compounds been confirmed by alternative analysis techniques.

hydrocarbons

The following qualifier exists for the data that is reported.
 LOD not achievable due to dilution indicated by **.

If you have any questions, contact David Degenhardt at (608) 262-2797.

17.

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S.L. Inhorn, M.D., Medical Director

Environmental Science Section
Organic chemistry

(608) 262-2797

DNR LAB ID 113133790

Id: 643440 Point/Well/...: 171 Field #: NT-2A Route: WR00

Collection Date: 10/10/95 Time: 11:30 County: 64 (Vilas)

From: NORTH TWIN LAKE 42 11E 35

Description: PISTON CORER, SEDIMENT ASSESSMENT

To: LINDA TALBOT

DNR GEF II WR/2

Source: Sediment

MADISON

Account number: WR283

Collected by: JANISCH

Waterbody/permit/...: 1623800

Enforcement

Date Received: 10/13/95

Labslip #: OG001187

Reported: 02/26/96

---- test: PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS

ACENAPHTHENE	**	UG/G, DRY #1
ACENAPHTHYLENE	**	UG/G, DRY #1
ANTHRACENE	**	UG/G, DRY #1
BENZIDINE	ND (LOD=NA	UG/G, DRY) #1
BENZO (A) ANTHRACENE	**	UG/G, DRY #1
BENZO (A) PYRENE	**	UG/G, DRY #1
BENZO (B) FLUORANTHENE	**	UG/G, DRY #1
BENZO (G, H, I) PERYLENE	**	UG/G, DRY #1
BENZO (K) FLUORANTHENE	**	UG/G, DRY #1
BENZOIC ACID	**	UG/G, DRY #1
BENZYL ALCOHOL	**	UG/G, DRY #1
BIS (2-CHLOROETHOXY) METHANE	**	UG/G, DRY #1
BIS (2-CHLOROETHYL) ETHER	**	UG/G, DRY #1
BIS (2-CHLOROISOPROPYL) ETHER	**	UG/G, DRY #1
BIS (2-ETHYLHEXYL) PHTHALATE	**	UG/G, DRY #1
4-BROMOPHENYL PHENYL ETHER	**	UG/G, DRY #1
BUTYL BENZYL PHTHALATE	**	UG/G, DRY #1
4-CHLORO-3-METHYLPHENOL	**	UG/G, DRY #1
4-CHLOROANILINE	ND (LOD=NA	UG/G, DRY) #1
2-CHLORONAPHTHALENE	**	UG/G, DRY #1
2-CHLOROPHENOL	**	UG/G, DRY #1
4-CHLOROPHENYL PHENYL ETHER	**	UG/G, DRY #1
CHRYSENE	**	UG/G, DRY #1
DIBENZO (A, H) ANTHRACENE	**	UG/G, DRY #1
DIBENZOFURAN	**	UG/G, DRY #1
1, 2 DICHLOROBENZENE	**	UG/G, DRY #1
1, 3-DICHLOROBENZENE	**	UG/G, DRY #1
1, 4-DICHLOROBENZENE	**	UG/G, DRY #1
3, 3'-DICHLOROBENZIDINE	ND (LOD=NA	UG/G, DRY) #1
2, 4-DICHLOROPHENOL	**	UG/G, DRY #1

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State Laboratory of Hygiene
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465 Henry Mall, Madison, WI 53706

R.H. Laessig, Ph.D., Director

S.L. Inhorn, M.D., Medical Director

Environmental Science Section

(608) 262-2797

DNR LAB ID 113133790

... continuing Labslip # OG001187,

Field # NT-2A

2,4-DIMETHYLPHENOL	**	UG/G, DRY #1
DIETHYL PHTHALATE	**	UG/G, DRY #1
DIMETHYL PHTHALATE	**	UG/G, DRY #1
DI-N-BUTYL PHTHALATE	**	UG/G, DRY #1
DI-N-OCTYL PHTHALATE	**	UG/G, DRY #1
4,6-DINITRO-2-METHYL PHENOL	**	UG/G, DRY #1
2,4-DINITROPHENOL	**	UG/G, DRY #1
2,4-DINITROTOLUENE	**	UG/G, DRY #1
2,6-DINITROTOLUENE	**	UG/G, DRY #1
1,2-DIPHENYLHYDRAZINE (AS AZOBENZENE)	ND (LOD=NA	UG/G, DRY) #1
FLUORANTHENE	**	UG/G, DRY #1
FLUORENE	**	UG/G, DRY #1
HEXACHLOROBENZENE	**	UG/G, DRY #1
HEXACHLOROBUTADIENE	**	UG/G, DRY #1
HEXACHLOROCYCLOPENTADIENE	ND (LOD=NA	UG/G, DRY) #1
HEXACHLOROETHANE	**	UG/G, DRY #1
INDENO (1,2,3-CD) PYRENE	**	UG/G, DRY #1
ISOPHORONE	**	UG/G, DRY #1
2-METHYLNAPHTHALENE	**	UG/G, DRY #1
2-METHYLPHENOL	**	UG/G, DRY #1
4-METHYLPHENOL	**	UG/G, DRY #1
NAPHTHALENE	**	UG/G, DRY #1
2-NITROANILINE	**	UG/G, DRY #1
3-NITROANILINE	ND (LOD=NA	UG/G, DRY) #1
4-NITROANILINE	**	UG/G, DRY #1
NITROBENZENE	**	UG/G, DRY #1
2-NITROPHENOL	**	UG/G, DRY #1
4-NITROPHENOL	**	UG/G, DRY #1
N-NITROSODIMETHYLAMINE	**	UG/G, DRY #1
N-NITROSO-DI-N-PROPYLAMINE	**	UG/G, DRY #1
N-NITROSODIPHENYLAMINE	**	UG/G, DRY #1
PENTACHLOROPHENOL	**	UG/G, DRY #1
PHENANTHRENE	**	UG/G, DRY #1
PHENOL	**	UG/G, DRY #1
PYRENE	**	UG/G, DRY #1
1,2,4-TRICHLOROBENZENE	**	UG/G, DRY #1
2,4,5-TRICHLOROPHENOL	**	UG/G, DRY #1
2,4,6-TRICHLOROPHENOL	**	UG/G, DRY #1

---- test: TEMPERATURE - 0950
TEMPERATURE

+ 17

---- test: PESTICIDE RESIDUE IN SOIL - CHLORDANES - 1510

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State Laboratory of Hygiene
University of Wisconsin Center for Health Sciences
465 Henry Mall, Madison, WI 53706

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Environmental Science Section

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DNR LAB ID 113133790

... continuing Labslip # OG001187,

Field # NT-2A

CIS-CHLORDANE	<0.01	UG/G, DRY
TRANS-CHLORDANE	<0.01	UG/G, DRY
CIS-NONACHLOR	<0.01	UG/G, DRY
TRANS-NONACHLOR	<0.01	UG/G, DRY

---- test: PEST. RESIDUE IN SOIL - op-DDD, op-DDE, op-DDT		
op-DDD	<0.01	UG/G, DRY
op-DDE	<0.01	UG/G, DRY
op-DDT	<0.01	UG/G, DRY

---- test: PESTICIDE RESIDUE IN SOIL - METHOXYCHLOR		
METHOXYCHLOR	<0.05	UG/G, DRY

---- test: PESTICIDE RESIDUE - HEXACHLORO BENZENE		
HEXACHLORO BENZENE	<0.01	UG/G, DRY

---- test: CHLOROPHENOLS IN SOILS - 1540		
2,4,6-TRICHLOROPHENOL	<0.10	UG/G, DRY
2,4,5-TRICHLOROPHENOL	<0.10	UG/G, DRY
PENTACHLOROPHENOL (PCP)	+ 0.02	UG/G, DRY
PHENOLS EXTRACTION/DERIVATIZATION	C	

---- test: TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD		
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY METHOD + 113000.		UG/G, DRY
TOTAL ORGANIC CARBON IN SEDIMENT BY SLURRY - PREP	C	
PRIORITY POLLUTANTS - SOIL/SEDIMENT PREPARATION	C	

---- test: PRIORITY POLLUTANTS -SOIL/SEDIMENT - PESTS - 1571		
ALDRIN	<0.01	UG/G, DRY
ALPHA-BHC	<0.01	UG/G, DRY
BETA-BHC	<0.01	UG/G, DRY
DELTA-BHC	<0.01	UG/G, DRY
GAMMA-BHC	<0.01	UG/G, DRY

CHLORDANE	<0.05	UG/G, DRY
pp-DDD	<0.01	UG/G, DRY
pp-DDE	<0.01	UG/G, DRY
pp-DDT	<0.01	UG/G, DRY
DIELDRIN	<0.01	UG/G, DRY

ENDOSULFAN I	<0.01	UG/G, DRY
ENDOSULFAN II	<0.02	UG/G, DRY
ENDOSULFAN SULFATE	<0.02	UG/G, DRY
ENDRIN	<0.01	UG/G, DRY
ENDRIN ALDEHYDE	<0.02	UG/G, DRY

HEPTACHLOR	<0.01	UG/G, DRY
HEPTACHLOR EPOXIDE	<0.01	UG/G, DRY
TOXAPHENE LIKE COMPOUND	<1.	UG/G, DRY

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Environmental Science Section (608) 262-2797 DNR LAB ID 113133790
... continuing Labslip # OG001187, Field # NT-2A

---- test: PRIORITY POLLUTANTS IN SOIL/SEDIMENT - PCBS - 1571
AROCLOR TOTAL <0.05 UG/G, DRY
PRIORITY POLLUTANTS - SOIL/SEDIMENT-PESTS/PCB PREP C

--- Footnotes ---

+: Positive results are prefixed by a plus sign.

Remark #1: SEE OG001187.MM1

Memo for OG001187

--- OG001187.MM1 - PRIORITY POLLUTANTS - BASE NEUTRAL/ACID SEDIMENTS ---

State Laboratory of Hygiene sample OG001187 may contain the compounds listed below according to tentative computer identification from gas chromatography/mass spectroscopy analysis. The concentration of contaminants could not be determined, nor has the presence of the compounds been confirmed by alternative analysis techniques.

hydrocarbons


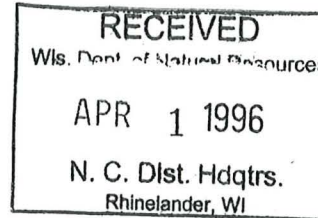
The following qualifier exists for the data that is reported.
LOD not achievable due to dilution indicated by **.

If you have any questions, contact David Degenhardt at (608) 262-2797.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: March 29, 1996

TO:  Scott Watson - NCD
Jim Kreitlow - NCDFROM: Tom Janisch - WR/2
Jim Amrhein - WR/2SUBJECT: Results of Meeting with Organic Chemistry Unit of Wisconsin
Laboratory of Hygiene to Discuss Analytical Results of Flood Plain
Soils and North Twin Lake Sediment Samples Associated with C. W.
Christiansen Pole Dipping Site

FILE REF: 3200

Linda Talbot (WR), Ron Arneson of the Technical Services Unit, and ourselves met with Dave Degenhardt and two of his staff of the Organic Chemistry Unit on 03/22/96 to discuss the analytical results associated with the subject soil and sediment samples. The analytical results for the five samples collected from the site in the period from October 9-11, 1995, and analyzed for the base/neutral and acid extractable priority pollutant grouping (method 1570), were generally qualified for all of the approximately 68 compounds with the exception of PCP. Because of the qualifiers, we were not able to determine whether or not compounds in two groupings of chemicals that are potential contaminants of concern for the site are present. These groupings involve phenolic compounds and PAH compounds. The former are of interest because they may be present as breakdown products or impurities in the manufactured PCP. Given the relatively large amounts of dioxin/furans in the creek, it is estimated that a large amount of PCP must have been discharged to the creek over time.

Analysis of creek sediments in the past have shown detectable levels of PCP but not what might be expected based on the dioxin/furan levels and much lower than the levels of PCP found in the site soils (maximum value of 87,000 mg/kg). Analysis of individual phenolic compounds was an attempt to determine if metabolites of PCP, some of which are potentially toxic and mutagenic, were present. Chlorophenols have not been tested for previously at this site.

PAHs were detected at high levels in previous testing of the on-land soils (maximum of 2,112 mg/kg) which may be related to the use of creosote compounds in the past wood treatment at the site. The analysis of the flood plain soils was an attempt to determine if PAHs had been transported from the on-land portions of the site to sites adjacent to the creek and out into the lake.

Among the questions we had for Dave and his staff were primarily:

- What problems did they run into that did not allow the method limit of detection (LODs) for the compounds to be achieved in the priority pollutant scan ?
- Why was there differences in the PCP concentrations reported out under the priority pollutant scan method (1570) and the compounds specific method (1540) and which value is more valid ?
- What was in the sample matrices that made them the "sediments from hell"? During collection, we did not note any unusual characteristics associated with the floodplain soils or lake sediments either of a visual or odor nature that would indicate the presence of any large amounts of organic chemicals in the samples. The same would hold true for the one lake sediment site off Military Creek, with the exception that there seemed to be a large amount of small wood chips in the sample.

In our discussions, the lab personnel indicated:

1. Since the priority pollutant scan is meant to determine if a number of different chemical compounds are present, "clean-up" of the sample to remove "interferences" is not done because a specific group of compounds that are meant to be scanned for may be removed in this process.
2. During work up of the samples for the priority pollutant scan, the chemist was apparently unable to concentrate the extract down to the desired 1 ml volume. Apparently the extract could be concentrated only down to 6 ml at which point "things" (their word) began to precipitate.
3. Dilution of the extract was apparently needed based on high background "noise", how busy the chromatogram appeared, and to prevent fouling and damage to the instrumentation from some unidentified component of the extracted sample.
4. The extracted samples had a orange-yellowish hue that the analyst felt may be associated with some industrial organic chemical being present.
5. The compounds in the sample matrices that may be causing the analytical problems were tentatively identified as "hydrocarbons", the concentrations of which could not be determined nor were their presence confirmed by alternative analytical methods. The analyst did indicate that in his reading of the chromatogram, he did not identify peaks associated with petroleum hydrocarbons. This may be somewhat confirmed in the no detect results from any of the DRO results. It was also not possible to determine if the interfering hydrocarbons were of a natural or anthropogenic nature.
6. The analyst indicated that this is the first time that they had concurrently done analysis using both methods (1570 and 1540) for chlorophenolic analysis. It is noted where there were measurable results from both methods, there was an order of magnitude difference between the result from the priority pollutant scan and the compound specific method for PCP. They did not say why there was a difference in results from the two methods and could not say whether one result was more valid than the other, but indicating the actual result may fall in between the two values. The quality control checks for the methods were within acceptable limits based on spike recoveries. While the compound specific method uses PCP as the spiking compound, the priority pollutant scan method uses other compounds for spiking. Apparently the same sample extracts were used for both analytical methods.
7. The analyst indicated that in the chromatogram he did not see any detects of chlorophenol ethers. These are the compounds that Christiansen's consultant had earlier contended were giving false readings for chloro-organic pesticides in the on-land soil samples. For our latest round of floodplain soil samples, no chlorinated pesticides were detected. This does not clarify the presence/absence of chlorinated pesticides and/or chlorophenol ethers in the samples taken by the Site Evaluation Unit in the Bureau of Solid and Hazardous Waste in 1993.

Overview of Results and Next Steps

Our October 1995 sampling effort has yielded partially useful chemical results.

- a. We did not have detects of pesticides or DROs in the flood plain soils or the lake sediment site.
- b. PCPs were detected at relatively high levels at both strata of flood plain sample FP-2, at lower levels in the downstream flood plain site, FP-3, and even lower levels in the lake sediment site, NT-2. The full risks associated to the creek from the floodplain soil PCP levels cannot be fully determined based on the possible range of values between the two method results.

The highest level of PCP in the creek to date have been those found in the September 1993 Site Evaluation Unit samples of 1,450 ug/kg at S-22 which appears to be just downstream of the FP-2 flood plain site. Given the values between these two sites, there is approximately two orders of magnitude reduction in PCPs in concentrations from the flood plain soils to the adjacent creek sediments when the results are compared between the two sample sites. Depending on the TOC levels in the sediments, levels of PCP at 1,450 ug/kg could still be directly toxic to benthic associated macroinvertebrates. A question is, "Do the floodplain PCP serve as a continuous low-level source of PCP to the creek, or are the PCP in the creek residual from some past, more direct discharge?" The answer may be a little of both.
- c. There is apparently some organic compound or compounds of a hydrocarbon nature that are common to the floodplain soils and the lake sediments that may have caused the analytical problems. The type(s) of the compound(s) is not specifically known. It would be interesting to know if site originated chemicals are responsible.
- d. We await the interpretation of our toxicity testing results. Preliminary results appear to indicate toxicity from the sediments collected at MC-2, which is near the two sampling sites mentioned above, S-22 and FP-2.
- e. We have not come up with a funding source to get the macroinvertebrates samples sorted and identified. A test sort by Schmude of UW-Superior of one replicate (MC-1A-5) from the reference site indicates a relatively sparse number of macroinvertebrates. The results need to be seen in the context of all the results when available. Preliminarily, it may be related to sampling immediately after high rain fall on the watershed which resulted in high flows and high levels in the creek. These perturbed conditions may have lead to loss of stability of bottom habitats and loss and disruption to the benthic communities.
- f. While our results from the October sampling effort at this point have not given us a clear picture as we would like, we do know a little bit more about the creek system associated with the site. The question of site impacts to the creek remain open at this time and need to be more fully explored.
- g. If time allows this summer, we would like to get onto the site again and do some more probing around in the creek, the associated flood plain, and out into the lake off of the creek mouth in order to conduct further physical characterization of the creek habitat and lake bottom conditions.

We should get together in the next month or so and talk over what our strategy for the creek should be in the context of the overall site given all of the information that we have in hand to date. If you have any questions or comments, please give us a call.

cc: Lee Liebenstein - WR/2
Bob Strous - SW/3
Linda Talbot - WR/2
Ron Arneson - TS/6

Masco Investigative & Security ¹ LTD

~\$7000

35 Samples - UW Superdram -

PCP

Dioxan / Furans

Chloro Pheno Compounds. (metabolite)