EPA Region 5 Records Ctr.
202467

1995
STATE RESPONSE

DOCUMENTS 35-41

KALAMAZOO RIVER

SITE

INVESTIGATION

DOCUMENTS #35 - 41

DRUG AND LAB DISPOSAL

DOCUMENT #35

Contents of Document 35

Description

A. August 2, 1995, letter from Honigman Miller Schwartz and Cohn to DLD.

B. "Unused Chemical Inventory"

C. "Unused Chemical Disposal Inventory"

D. 3-page, hand written inventory of Chemicals loaded onto DLD's vehicle on October 20, 1994.

E. Four manifests, dated October 20, 1994.

F. Letters from product manufacturers.

G. MDNR manifest information.

H. June 19, 1995, letter to Keith Kling from DLD.

I. DLD Invoice No. 410068, dated December 7, 1994, for services performed on October 20, 1994.

J. June 19, 1995, memo from Dave Merkel describing visit to DLD's facility.

K. DLD analytical report of a sample taken from Tank #4 on November 8, 1994.

L. Transcript of June 21, 1995, voice-mail message from DLD.

M. DLD analytical results.

O. Western Michigan analytical results.

P. August 1, 1995, ATS Report.

Q. DLD Waste Analysis Plan

DRUG AND LAB DISPOSAL

DOCUMENT #35A

A. August 2, 1995, letter from Honigman Miller Schwartz and Cohn to DLD.

LAW OFFICES
HONIGMAN MILLER SCHWARTZ AND COHN
A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS
2290 FIRST NATIONAL BUILDING
DETROIT, MICHIGAN 48226-3583
FAX (313) 962 0176

JOSEPH M POLITO
DIRECT DIAL NUMBER
(313) 256-7532

LANSING MICHIGAN
WEST PALM BEACH, FLORIDA
TAMPA, FLORIDA
ORLANDO, FLORIDA
LOS ANGELES, CALIFORNIA

August 2, 1995

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Kevin Jay Berghuis
Hazardous Materials Director
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, Michigan 49080

Re: Response to June 19, 1995, Letter to Menasha Corporation

Dear Mr. Berghuis:

We are attorneys for Menasha Corporation ("Menasha") and are writing this letter on behalf of Menasha to respond to your June 19, 1995, letter to Keith Kling of Menasha regarding polychlorinated biphenyls ("PCBs") allegedly detected in 14 drums of Drug & Laboratory Disposal, Inc.'s ("DLD") out-going processed waste. You allege that these drums contained both Menasha's nonpumpable waste from a shipment to DLD on October 20, 1994 ("Menasha's Shipment"), and waste solvents from other third-party generators. You further allege that DLD is "confident that the PCB-contamination of the nonpumpable waste drums is the result of PCBs in the formulation of the chemical products" in Menasha's Shipment. Menasha strongly objects to the allegations in your letter, which were asserted in reckless disregard of the facts related to this matter.

Menasha was particularly disappointed to receive your June 19, 1995, letter because it contained numerous unfounded claims that were highly inconsistent with verbal statements made by DLD during an on-site visit by Menasha representatives, Dave Merkel and Keith Kling, on June 12, 1995. During that visit, DLD acknowledged that it lacked any assurance that the PCBs at issue actually came from the Menasha Shipment. As you are aware, making groundless and unsubstantiated claims regarding the use or disposal of hazardous materials, such as PCBs, could cause substantial economic harm and potential liability to be incurred by the wrongly "accused" party under federal and state environmental laws.

Menasha's investigation of this matter included verifying that the products disposed of in Menasha's Shipment did not contain PCBs, inspecting DLD's facility and operations, interviewing DLD personnel, reviewing the Michigan Department of Natural Resource's hazardous waste

manifest files, and obtaining an opinion from an analytical chemist on DLD's sampling and management procedures. This investigation demonstrates that: (1) Menasha did not arrange for the disposal of PCB-containing material with DLD; (2) DLD's waste tracking, handling, sampling, and testing procedures are wholly inadequate and do not conform to industry standards and required waste analysis procedures; (3) DLD's own analyses does not confirm the presence of PCB's in all 14 of the drums referenced in your June 19, 1995, letter; and (4) because DLD received over 134,000 pounds of waste during the month of October, 1994, and apparently commingled some or all of this waste with Menasha's Shipment without any initial PCB screen or internal waste tracking system, DLD cannot possibly attribute PCBs in any out-going waste to Menasha's Shipment or any other incoming shipment.

As stated above, to aid in its investigation, Menasha retained Phil Simon, an analytical chemist with Ann Arbor Technical Services, Inc., to review the information regarding the disposal of Menasha's waste and DLD's waste handling practices. Mr. Simon concluded that DLD's operations are not in accordance with sound waste sampling and tracking practices. Specifically, he made the following conclusions in his report on this matter:

> *The apparent lack of waste tracking procedures at DLD precludes attributing PCB contamination of the involved DLD wastes to Menasha or to another single generator or waste shipment.*
>
> The analytical data provided by DLD to support the disposal of 14 drums is suspect. The four sample replicates exhibited poor and unacceptable precision (RPD [relative percent difference] > 30%) and the *data from both DLD and Western Michigan Environmental indicate that six drums of waste material are contaminated with PCB, rather than the fourteen drums which DLD claims.*
>
> DLD apparently did not use standard analytical methods in their evaluation of drum contents, and they supplied no supporting documentation to validate their measurements, so the DLD data must be considered suspect.
>
> The DLD position that PCB contamination in their waste streams originated in the Menasha waste shipment cannot be demonstrated from the facts they have presented concerning the handling, tracking, sampling and analysis of wastes at the facility. (Emphasis added.)

Based on Mr. Simon's conclusions, DLD cannot, as claimed in your letter, be "confident" that Menasha's waste contributed to the PCBs in DLD's out-going processed waste.

DRUG AND LAB DISPOSAL

DOCUMENT #35B

Further, DLD's own invoice indicates that DLD conducted 3 initial PCB screens on Menasha's Shipment. Notwithstanding Menasha's request for the results of these screens, DLD has failed to provide the results, which presumably were negative because DLD commingled Menasha's Shipment without further testing. In fact, due to DLD's poor waste tracking, sampling and handling practices, DLD cannot be certain that: (1) the 14 samples actually came from the drums believed to contain Menasha's nonpumpable waste; (2) those drums actually contained Menasha's nonpumpable waste; (3) Menasha's waste was the only nonpumpable waste contained in those drums; (4) the third-party solvents used to cut the nonpumpable material did not contain PCBs; or (5) the drums actually contained PCBs. Thus, DLD's assertions regarding the origin of PCBs in its out-going processed waste are baseless and Menasha intends to hold DLD accountable for all liability and expenses incurred by Menasha in connection with these unfounded allegations.

Menasha also hereby demands that DLD reimburse Menasha the amounts it paid for the additional testing and disposal costs for the 14 drums at issue and allegedly due to the presence of PCBs. Menasha's purchase orders and DLD's invoices related to Menasha's Shipment indicate that Menasha paid DLD approximately $36,424 to package, transport and dispose of Menasha's waste. This amount included: (1) $7,700 for the disposal of 14 drums of DLD's out-going PCB-contaminated processed waste; (2) $2,280 for 19 PCB analyses on those 14 drums; and (3) $4,340 for 14 metal analyses on those 14 drums. Menasha demands that DLD reimburse Menasha $14,320, representing the total of the above three amounts, within ten (10) days after your receipt of this letter. Please govern yourself accordingly.

Very truly yours,

HONIGMAN MILLER SCHWARTZ AND COHN

By: Joseph M. Polito

Joseph M. Polito

cc: Glenn D. Holcombe, Esq.
Mr. John Bonham
Mr. Philip Simon

DET03/79505 1

B. "Unused Chemical Inventory"

UNUSED CHEMICAL INVENTORY

CHEMICAL	CONTAINER SIZE	POSSIBLE USE LOCATION
CHEM LUBE K-320 (CATIONIC POLYMER)	1 - 55 GALLON DRUM	WASTE TREATMENT
CALGON HYDRAID TRP-943EZ (POLYMER)	1 - 55 GALLON DRUM	IMPCO
NALCO NALCOLYTE 7151 (POLYMER)	1 - 55 GALLON DRUM	IMPCO
CALGON POL-E-Z 2696 (POLYMER)	2 - 55 GALLON DRUM	IMPCO
CALGON HYDRAID 7706 (POLYMER)	5 - 55 GALLON DRUM 2	IMPCO
ENERCO 803 (POLYMER)	4 - 55 GALLON DRUM	IMPCO
CALGON 2696 (POLYMER)	1 - 55 GALLON DRUM	IMPCO
CALGON 1617 (POLYMER)	1 - 55 GALLON DRUM	IMPCO
ENERCO 878 (POLYMER)	2 - 55 GALLON DRUM	IMPCO
CALGON 2426 (POLYMER)	3 - 55 GALLON DRUM	IMPCO
NALCO 7132 (POLYMER)	2 - 55 GALLON DRUM	IMPCO
BETZ 1115L (POLYMER)	4 - 55 GALLON DRUM 8	IMPCO- [illegible]
SANDOZ CARTARETIN PEM	1 - 55 GALLON DRUM	IMPCO
CALGON PHREE GAURD	1 - 55 GALLON DRUM	POWERHOUSE
CALGON CONQUOR 3585	3 - 55 GALLON DRUM	POWERHOUSE
SPECIAL 909 SOLVENT	1 - 55 GALLON DRUM	#1/#2 PM
SANSOLV MC	1 - 55 GALLON DRUM	#1/#2 PM
DU BOIS RADI-AZE (CLEANER)	1 - 55 GALLON DRUM	#1/#2 PM
DU BOIS SAF-T-BRITE	2 - 55 GALLON DRUM	#1/#2 PM
MINERAL SPIRITS	1 - 55 GALLON DRUM	#1/#2 PM
VERTAN 650 DEPOSIT CONTROL	1 - 55 GALLON DRUM	BOILOUT
NITROFOAM	1 - 55 GALLON DRUM	BOILOUT
DUBOIS ISM 10A	1 - 55 GALLON DRUM	BOILOUT
BETZ CHELANT CL-2	1 - 55 GALLON DRUM	BOILOUT
DUBOIS IFK-9B	5 - 55 GALLON DRUM	BOILOUT
CALGON CL 361	1 - 55 GALLON DRUM	WATER TREATMENT
NALCO 7310	1 - 55 GALLON DRUM	WATER TREATMENT
BETZ CL 136	1 - 55 GALLON DRUM	INVESTIGATING

4/8 dms

MEN01143

UNUSED CHEMICAL INVENTORY – SKIDS

CHEMICAL	CONTAINER SIZE
ACCRACOOL MASS CASTINTING POLYMER PART B	1 – 1 GALLON CONTAINER
REM PRIME QD – ASPHALT BASE PRIMER	1 – 1 GALLON CONTAINER
ACCRACOOL PART A	1 – 1 GALLON CONTAINER
BENJAMIN MOORE LATEX PAINT	1 – 1 GALLON CONTAINER
PRATT & LAMBERT PRO HIDE PLUS PAINT	3 – 5 GALLON CONTAINER
SHERWIN WILLIAMS EPOXY ALUMINUM HARDENER	3 – 5 GALLON CONTAINER
TREMCO RUST PAINT	1 – 5 GALLON CONTAINER
HY TECH PART A ACTIVATOR	1 – 1/2 GALLON CONTAINER
PRIMER P–70 FOR PVC	1 – 1 QUART CONTAINER
THERMAZIP FASTENER WELD (TETRAHYDROFURAN)	3 – 1 PINT CONTAINER
HY TECH PART B SEED COAT	1 – 1 GALLON CONTAINER
PRATT & LAMBERT LATEX ENAMEL	1 – 1 GALLON CONTAINER
PORT CITY FLOOR ENAMEL	3 – 1 GALLON CONTAINER
FULLER OBRIEN HEAVY DUTY ENAMEL	1 – 1 GALLON CONTAINER
SHERWIN WILLIAMS PAINT	1 – 1 GALLON CONTAINER
UNLABLED PAINT	2 – 1 GALLON CONTAINER
DEGRACO ACRI/GARD RUST INHIBITIVE COATING	1 – 1 GALLON CONTAINER
DEGRACO PHENOLIC OXIDE PRIMER	8 – 1 GALLON CONTAINER
VALSPAR PORCH & FLOOR ALKYD ENAMEL	2 – 1 QUART CONTAINER
BENJAMIN MOORE IMPERVO ALKYD ENAMEL	1 – 1 QUART CONTAINER
PERMALASTIC PL 390 COVE BASE ADHESIVE	1 – 1 QUART CONTAINER
LIQUID BOILER SOLDER SEAL	1 – 1 QUART CONTAINER
GARLOCK PIPE THREAD COMPOUND TYPE A	1 – 1 PINT CONTAINER
NITOBOND MIX A BASE EPOXY ADHESIVE	2 – 1 GALLON CONTAINER
CONKLIN DEROL SEAL PIPE SEALANT	5 – 1 PINT CONTAINER
RANDUSTRIAL EPOXY FLOOR PATCH HARDENER B	1 – 1 PINT CONTAINER
LOK–CEASE ANTI–SEIZE LUBRICATING COMPOUND	1 – 1 QUART CONTAINER
CERAMIC WALL & COUNTER TILE ADHESIVE	1 – 1 QUART CONTAINER
K–72 (CONTAINS PHENOL)	4 – 2 OUNCE CONTAINER
RF–SC HARDENER	4 – 2 OUNCE CONTAINER
NITOBOND PART B HARDENER	1 – 1 GALLON CONTAINER
DEGRACO ACRI/GARD 4005 CLEAR BASE E COATING	13 – 1 GALLON CONTAINER
ARMSTRONG ARMAFLEX FINISH PAINT	2 – 1 GALLON CONTAINER
PRATT & LAMBERT PALGARD EPOXY COATING	1 – 1 GALLON CONTAINER
PRATT & LAMBERT PALGARD EPOXY ACTIVATOR	1 – 1 GALLON CONTAINER
ACRYLPLEX ACRYLIC COATING	1 – 1 GALLON CONTAINER
PORT CITY RED OXIDE PRIMER	1 – 1 GALLON CONTAINER
GRAHAM MACHINERY ENAMEL	1 – 1 GALLON CONTAINER
ZEP PLS – LUBRICATING SPRAY	1 – 1 GALLON CONTAINER
SHERWIN WILLIAMS PRIMER PAINT	5 – 1 GALLON CONTAINER
ETCHANT – FERRIC CHLORIDE SOLUTION	1 – 1 GALLON CONTAINER
TREMCO POLYROOF ROOF ELASTOMER	2 – 1 GALLON CONTAINER
TREMCO 200 CLEANER (KETONE SOLVENT)	1 – 1 GALLON CONTAINER
HYTECH PART C AGGREGATE (FLOOR PATCH)	1 – 5 GALLON CONTAINER
HYTECH PART B TOP COAT (FLOOR PATCH)	2 – 5 GALLON CONTAINER
RED GAGE OIL	1 – 1 QUART CONTAINER
UNMARKED (CORROSIVE)	1 – 1 GALLON CONTAINER
VALSPAR DAMP GRIP PAINT	1 – 1 GALLON CONTAINER
RANDUSTRIAL FLOOR PATCH	2 – 1 GALLON CONTAINER
RECORDING INK	3 – 1 GALLON CONTAINER
LOCQUIC ACTIVATOR 707	1 – 1 QUART CONTAINER
	102 CONTAINERS

DRUG AND LAB DISPOSAL

DOCUMENT #35C

DRUG AND LAB DISPOSAL

DOCUMENT #35D

UNUSED CHEMICAL DISPOSAL INVENTORY

CHEMICAL	CONTAINER SIZE	$
UNKNOWN	10 – 55 GALLON DRUM	5250
SONNEBORN KURE-N-SEAL	1 – 55 GALLON DRUM	250
SYMONS FORM COATING	1 – 55 GALLON DRUM	250
AMOCO 300 MO 15W40 OIL	1 – 55 GALLON DRUM	350
HB FULLER SOLVENT CEMENT	1 – 55 GALLON DRUM	250
BETZ POLYMER 1165L	8 – 55 GALLON DRUM	2800
CALGON LP15S	1 – 55 GALLON DRUM .50?	525
DUBOIS CI575A	1 – 55 GALLON DRUM	350
CALGON BA11FP	1 – 55 GALLON DRUM .50?	350
CALGON L – 675	1 – 55 GALLON DRUM	350
CALGON 7706 (POLYMER)	2 – 55 GALLON DRUM - 4?	700
HAVILAND SODIUM SILICATE	4 – 55 GALLON DRUM - 2!	1400
OAKITE HIGHUTE	1 – 5 GALLON DRUM	9
ZEP G-12 WEED KILLER	1 – 15 GALLON DRUM 50!	100
BIG TEX	1 – 30 GALLON DRUM	290
SHALCO COMPLETE VEGETATION KILLER	1 – 30 GALLON DRUM	200
DREWFAX 343	1 – 55 GALLON DRUM	350
HENKEL SPLICING CEMENT	1 – 55 GALLON DRUM	250
CALGON CL-56	1 – 55 GALLON DRUM	525
MILSOLV	1 – 55 GALLON DRUM	350
PACKER TECH OIL	1 – 55 GALLON DRUM	410
TEXACO OIL	1 – 55 GALLON DRUM	410
SKID – PAINT		54
HERCON UBK	3 – 55 GALLON DRUM	1050
NALCO NALCOLYTE 7129 (POLYMER)	2 – 55 GALLON DRUM	700
FERRIC CHLORIDE	2 – 55 GALLON DRUM	1050
CHLORINE GAS	CYLINDER	
MERCURY	BROKEN THERMOMETER	
	TOTAL	15573

49 drms

C. "Unused Chemical Disposal Inventory"

D. 3-page, hand written inventory of Chemicals loaded onto DLD's vehicle on October 20, 1994.

MENASHA

I ~~IIII~~	pratt + lambert paints	1g
PC?	polyfloc 3 · could be wastewater treatment polymer · prob sample	5g
	asphalt primer	1g
	tremco rust paint	5g
II ~~IIII~~	phenolic oxide primer	1g
IIII	paint	1g
II	mitobond 77 epoxy	1g
I ~~IIII~~	sherwin williams paint	5g
III ~~IIII~~	sherwin willl/enamel hardener	1g
	Zep	1g
II	tremco cleaner	1g
	machine enamel	1g
III	paints (port city)	1g
III	pratt + lambert plagard	1g
	ink	1 pt
II	red gage oil + empty vials	1 pt
	damp grip	1g
	ferric chloride	1g
II	recorder ink	1g
	flex finisher	1g
III ~~IIII~~	phenol hardener	15 ml
III	repaint it enamel	1g
	white grease	1#
	radiator cleaner	1#
	aerosol cleaners	1#

MEN01150

MENASHA

II	Epoxy mastic aluminum A	5 gal
IIII	Pratt & Lambert plus	5 gal
	High tech part B gray	5 g
	Hi tech part C	5 g
	Unknown	5 g
	Epoxy mastic part B	5 g
III	unknown (paint)?	1 g
	solder seal	1 qt
	cove base adhesive	1 pt
	alkyd low luster	1 pt
II	hi tech C coat part A	1 qt
III	fastener weld	100 ml
	unknown	1 pt
	PVC primer	1 pt
~~IIII~~	pipe joint seal	1 pt
	epoxy floor patch	1 pt
~~IIII~~ ~~IIII~~ ~~IIII~~	acri gard clear base	1 gal
	lok cease	1 pt
II	porch & floor enamel	1 pt
	tile adhesive	1 pt
	Conform teflon	1 g
II	plastic roof cement	5 g
pc?	petroleum naptha - wire cleaner for #1:#2 [illegible] - but not in [illegible]	5 g
	mass casting powder A	1 g
	mass casting polymer B	1 g

MEN01151

Complete list on 3 pages

-22-94 MENASKA

when produced? 1982-85

	paint / cardboard — solvent not used in process walls / floors	55 g	
PC	enerco polymer unknown — waste treatment polymer no letter	55 g	MSDS!
II	unknown w/ spicket — one blast by contractor ½ full w/ oil subst.	55 g	
	cosmoline — rust inhibitor for metal parts not process chem	55 g	
III	hercon UBK — #1 machine water shedding capabit letter OPCS → food grade product	55 g	
	unknown w/ white foam — prob not mendis	55	
III	oil — no record of when originated	55	
	calgon 155 — power house chem not process chem — steam treatment letter	30 g	96
III ~~IIII~~ PC	bedz 1165L — waste treatm polymer — letter ok added at clarifier	55 g	97
IIII	calgon 7706 — power house chem — steam treatment latter	55 g	96
PC	Dubois CIS 75A — solvent based cleaner — letter. Cleaned felt / had 8 drums at one time	55 g	
	vertan — letter ok closed loop coolant.	55	
	calgon ? — power house chem — letter	30 g	
	calgon BA 11 FP — power house chem — letter	30 g	96
	unknown white drum — prob not menasha's	55 g	
	calgon L675 — waste treatment polymer — Letter	55 g	
II	Haniland sod silicate — power house chem — steam treatment letter	55 g	97
	oakite highlite — takes oil grease off concrete — powder letter	5 g	
	Zep G 12 weed killer — waiting on letter	30 g	
	shalco vegetation killer — out of business	30 g	
	Big tex solvent — Letter never used b/c used other — parts cleaner	30 g	
	Nitrofoam — not process chemical used in cleaning — MSDS	30 g	
	unknown green drum — talk to Lea	55 g	

~~39~~

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MEN01152

DRUG AND LAB DISPOSAL

DOCUMENT #35E

E. Four manifests, dated October 20, 1994.

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

1989 Failure Section Act 1.

MEN01154

Please print or type

Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MID005012405 Manifest Document No. 914010 2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Menasha Corporation
320 N. Farmer/P.O. Box 155
Otsego MI 49078-0155

4. Generator's Phone (616) 692-6141

A. State Manifest Document Number: MI 3667795

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. FLAMMABLE LIQUIDS, N.O.S., 3, UN 1993 PG II (ALCOHOLS AND ETHER) (DOCS) RQ: 100#	X	2	0m	420	P	F003	N
b. PAINT, 3, UN 1263, PG II	X	5	0m	750	P	D001	N
c. COMBUSTIBLE LIQUIDS, N.O.S., (COMBUSTIBLE LIQUIDS, N.O.S., NA 1993, PG III & (RED GAGE OIL AND LUBE OILS)	X	3	0m	600	P	021L	N
d. PETROLEUM DISTILLATES, N.O.S., 3, UN 1268, PG III (WEED KILLER SOLUTION)	X	1	0m	90	P	029L	N

J. Additional Descriptions for Materials Listed Above
a) ALSO D001

K. Handling Codes for Wastes Listed Above
a/c /
b/c /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 625-9824

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: LEN E. MYERS
Signature: Len E Myers
Date: Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jeffrey L. Ramsey
Signature: Jeffrey L Ramsey
Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

ALL SPECIAL COST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER 800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9.88)

PR 51 [illegible]

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

MEN01155

Please print or type

Form Approved OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: M I D 0 0 5 0 1 2 4 0 5
Manifest Document No: 9 0 0 0 0 4
2. Page 1 of 1
Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Nemasha Corporation
320 N. Farmer P.O. Box 155
Otsego MI 49078-0155
4. Generator's Phone (616) 692-5141

A. State Manifest Document Number: MI 3667796
B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc
6. US EPA ID Number: M I D 0 9 2 9 4 7 2 2 2
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080
10. US EPA ID Number: M I D 0 9 2 9 4 7 2 2 2
G. State Facility's ID
H. Facility's Phone

GENERATOR

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. ACT 136 REGULATED MATERIAL (CALGON WATER TREATMENT)	6	DM	950	P	D29L	N
b. ACT 136 REGULATED MATERIAL (KEROSENE AND POLYMERS)	6	DM	1300	P	D29L	N
c. ACT 136 REGULATED MATERIAL (ENERGO POLYMERS)	3	DM	900	P	D29L	N
d. ACT 136 REGULATED MATERIAL (ACRYLIC POLYMERS)	4	DM	1100	P	D29L	N

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: LEN E MYERS
Signature: Len E Myers
Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tolliney L. Ramsey
Signature: Tolliney L. Ramsey
Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month Day Year 1 0 2 1 0 9 4

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER 800-424-8802 24 HOURS PER DAY

EPA Form 8700-22 (Rev. 9/88) PR 6113

F. Letters from product manufacturers.

MEN01160

HERCULES

Hercules Incorporated
Hercules Plaza
1313 North Market Street
Wilmington, DE 19894-0001
(302) 594-5000

REGULATORY AFFAIRS

June 9, 1995

Mr. Keith Kling
Menasha Corporation
320 North Farmer Street
Otsego, MI 49078

Dear Mr. Kling:

RE: Hercon® UBK Sizing Emulsion

This letter is in response to a request for information from Mr. Mike Schreitar. Hercules does not knowingly use nor reasonably expect the presence of polychlorinated biphenyls (PCBs) in Hercon UBK. However, this product has not been analyzed for PCBs.

I hope this letter will meet your needs; please feel free to contact me if further information is required.

Sincerely,

Gary E. Lee
Senior Regulatory Specialist
(302) 594-7139

GEL/elm

cc: Mr. M. Schreiter - Menasha Corporation

MEN01161

CALGON CORPORATION

WATER TREATMENT PRODUCTS
PAPER CHEMICALS
SURFACE TREATMENT PRODUCTS
COSMETIC INGREDIENTS
SPECIALTY BIOCIDES

June 13, 1995

Mr. Keith Kling
Menasha Corporation
320 N. Farmer Street
Otsugo, MI 49078

Dear Mr. Kling:

Please be advised that none of the below listed Calgon Corporation products was manufactured with nor are known to contain any polychlorinated biphenyls (PCBs).

Calgon 15S
Hydraid 7706
BA-11 FP
L-657

I trust this information will satisfy your needs. If you should have any questions, please do not hesitate to contact me.

Sincerely,

CALGON CORPORATION

Brian T. Laplante

Brian T. Laplante, Manager
Toxicology and Product Safety

BTL/mld

P.O. BOX 1346 • PITTSBURGH, PA 15230 • PHONE (412) 777-8000 • FAX (412) 777-8927

INNOVATIVE TECHNOLOGIES, CREATIVE SOLUTIONS ...SINCE 1919

BETZ
Water Management Group

MEN01162

Betz Water Management Group
[illegible]
[illegible], PA [illegible]
[illegible]

June 12, 1995

Mr. Keith Kling
Menasha Corporation

Re: Polymer 1165L

Dear Mr. Kling:

This letter will certify that this product does not contain any polychlorinated biphenyls(PCBs).

If you have additional questions, please call me at 215-773-6107.

Sincerely,

BETZ WATER MANAGEMENT GROUP

Ted Ledeboer
Environmental Specialist
Environmental/Regulatory Affairs

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 1
To KEITH KLING	From TIM HONÉ
Co. MENASHA	Co. BETZ
Dept.	Phone # 810-473-6262
Fax # 616-692-2060	Fax # 810-473-4460

Diversey

Diversey Corp.
12025 Tech Center Dr
Livonia MI 48150-2193

Tel 313 458 5000
Fax 313 458 3800

MEN01163

Diversey

Diversey Corp.
12025 Tech Cent
Livonia MI 48150-2193
Tel 313 458 2921
Tel 800 521 8140
FAX 313 458 2491
Beeper 800 946 4646 PIN 8015764

Norm Jepson
Regulatory

June 16, 1995

Mike Schreiter
Menasha Corp.
320 North Farmer
Otsego, MI 49078

DuBois Product: C-1575A

Dear Mr. Schreiter,

We do not intentionally add or are not aware of any Polychlorinated Biphenyls (PCB) in our products or our raw materials.

Sincerely,

Norm Jepson

Norm Jepson

Regulatory
313-458-2921

MEN01164

HAVILAND® PRODUCTS COMPANY
421 ANN ST N.W. GRAND RAPIDS, MICH. 49504-2075

GRAND RAPIDS 616-361-6691
ORDER ENTRY 1-800-627-2111
TELEFAX 616-361-9772

June 16, 1995

Keith Kling
Menasha Corp.
320 N. Farmer
Otsego, MI 49078-0155

RE: Sodium Silicate

Dear Mr. Kling:

To the best of our knowledge there are no PCB's in the Sodium Silicate that we have distributed to Menasha Corp.

If you need additional information, please feel free to contact me.

Sincerely,

Linda Mitchell
Safety & Compliance Manager

LM/m

MEN01165

ZEP MANUFACTURING COMPANY
1310 Seaboard Industrial Boulevard. N.W.
Post Office Box 2015
Atlanta, Georgia 30301
(404) 352-1680

June 26, 1995

Menasha Corp.
320 North Farrel Street
Otsego, MI 49078

Attn: Keith Kling

Mr. Kling:

This letter is to certify that the product Zep G-12B Granular Weed Killer does not contain residues of the chemical PCB.

If I may be of additional service in this matter, please contact me at Zep Technical Services, (404) 352-1680.

Sincerely:

Greg Bruce

Greg Bruce
Chemist, Technical Services

MEN01166

MANTEK

June 15, 1995

Keith Kling
Menasha Corp.
Box 155
Otsego Mi. 49078

Sir:

This is in reference to your call concerning our product Big Tex.

Big Tex is a heavy duty liquid detergent. No Polychlorinated Biphenyl is used in the manufacture of this material. None of the ingredients are known or suspected of containing any trace of Polychlorinated Biphenyl..

I hope this information will prove sufficient for your purposes. Please feel free to have any government agency which you report to contact our firm should they need confirmation of this information.

Regards

George Zimmerman
Chemist, Technical Services

REPLY TO:
☐ P.O. Box 660196, Dallas, Texas 75266-0196
☐ Suite 240, 300 North Continental Blvd., El Segundo, CA 90245
☐ 16000 Pacific Hwy. South, Suite 1102, Seattle, WA 98188
☐ P.O. Box 20911, Indianapolis, IN 46220-0911
☐ Suite 300, 1775 The Exchange, Atlanta, GA 30339-2061
☐ Mack II, Mack Centre Dr., 3rd Floor, S. Lobby, Paramus, NJ 07652-3905

MEN01167

PAPERBOARD DIVISION

MENASHA CORPORATION

June 13, 1995

Mr. Jack Horvath
Hydro Chem Industrial Services, Inc.
6210 Rothway
Ste. 150
Houston, TX 77040

Dear Mr. Horvath:

I spoke with you on the phone on June 13 regarding the chemical product Vertan. As I mentioned, we are asking for written verification that the product was not manufactured with PCB's and, to the best of your knowledge, does not (or did not) contain any PCB's. You verbally confirmed this for me and agreed to respond in writing provided we request so in writing.

We at Menasha thank you for your help in this regard. Please address your correspondence to Mr. Keith Kling, Environmental Manager, at the address below.

Sincerely,

Otsego Paperboard Division

Mike Schreiter

Mike Schreiter
Process Engineer

MS/alp

Otsego Mill
320 N Farmer St
PO Box 155
Otsego MI 49078-0155
1-616-692-6141
1-616-692-2060 (Fax)

MEN01168

HydroChem™
INDUSTRIAL SERVICES, INC.

Jack W. Horvath, TS&D Dept.
6310 Rothway, Suite 135
Houston, TX 77040

June 20, 1995

Mr. Keith King
Environmental Manager
Menasha Corporation
P.O. Box 155
Otsego, MI 49078-0155

Dear Mr. King:

In reply to the letter from your Mr. Mike Schreiter, dated June 13, HydroChem Technical Service and Development (TS&D) Department offers the following statement.

Hydrochem has several chelant products marketed under the trade name Vertan (Vertan 665, Vertan 675, etc.). To the best of our knowledge, none of these products contains any PCB's. Further, they are not manufactured with PCBs.

HydroChem and its employees thank you for using our services and products. Please feel free to contact me if you require further information.

Sincerely,

Jack W. Horvath

CC:	Steve Barber	Tom Carter	Greg Casey
	Pat Debusk	Wayne Frenier	Craig Kaple
	George Leach	Gary Noto	Rod Powell
	Gary Sievert	Pelham Smith	Trevor Williamson
	Mike Steindler	Pam Yokley	Mike Joyce

6210 Rothway
Houston,Texas 77040
(713) 462-2130
Fax (713) 939-7674

MEN01169

Facsimile Cover Sheet

To:	KEITH KLING
Company:	MANASHA CORPORATION
City and State:	OTSEGO, MI
Phone:	
Fax:	616-692-2060
From:	HANK LIMPER
Company:	Houghton International
Phone:	610-666-4000
Fax:	610-666-1376
Date:	AUGUST 1, 1995
Pages including this cover page:	0

Comments:

Mr. Kling:

Based on a discussion I just had with a Mr. Jeff Woolstrum, I would like to inform you that we do not use PCB's in the manufacture of any of our Cosmoline products.

Sincerely,

Hank Limper
Houghton International
Rust Preventives

DRUG AND LAB DISPOSAL

DOCUMENT #35G

G. MDNR manifest information.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928 (waste that was shipped to Drug Lab)
10/1/94 – 1/31/95

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI2133649	GEN	MID064181076	MID092947928	MID092947928	09602789	01/03/1995		N	A	D001	H	5.0	0.0	0.0
									B	F003	H	5.0	0.0	0.0
									C	D007	H	5.0	0.0	0 0
									D	F002	H	5.0	0.0	0 0
	TSD	MID064181076		MID092947928	09760403	01/03/1995		N	A	D001	H	5.0	0.0	0.0
									B	F003	H	5.0	0.0	0.0
									C	D007	H	5.0	0.0	0.0
									D	F002	H	5.0	0.0	0.0
MI3103662	GEN	MID980682827	MID092947928	MID092947928	09482619	11/18/1994		N	A	D009	H	0.0	15.0	0.0
									B	D002	H	0.0	2.0	0.0
									C	D001	H	0.0	40.0	0.0
									D	D001	H	0.0	2500.0	0.0
	TSD	MID980682827		MID092947928	09542356	11/18/1994		N	A	D009	H	0.0	15.0	0.0
									B	D002	H	0.0	2.0	0 0
									C	D001	H	0.0	40.0	0 0
									D	D001	H	0.0	2500.0	0.0
MI3452075	GEN	CA0210020780	MOD095038998	MID092947928	09660003	12/09/1994		N	A	D002	H	0.0	6.0	0.0
	TSD	CA0210020780	CAD983641101	MID092947928	09601513	12/21/1994		N	A	D002	H	0.0	6.0	0 0
MI3452076	GEN	CA4570024337	MOD095038998	MID092947928	09822127	12/09/1994		N	B	D002	H	0.0	6.0	0.0
	TSD	CA4570024337	CAD983641101	MID092947928	09821493	12/21/1994		N	B	D002	H	0.0	6.0	0.0
MI3459500	GEN	MID006012801	MID092947928	MID092947928	09571255	12/06/1994		N	A	D002	H	0.0	5.0	0 0
									B	029L	N	0.0	90.0	0.0
	TSD	MID006012801		MID092947928	09601614	12/06/1994		N	A	D002	H	0.0	5.0	0 0
									B	029L	N	0.0	90.0	0.0
MI3459503	GEN	MID980682827	MID092947928	MID092947928	09571871	12/23/1994		N	A	D009	H	0.0	20.0	0.0
									B	D008	H	0.0	40.0	0.0
	TSD	MID980682827		MID092947928	09601540	12/23/1994		N	A	D009	H	0.0	20.0	0.0
									B	D008	H	0.0	40.0	0.0

MEN01172

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459504	GEN	MI0000361204	MID092947928	MID092947928	09692111	01/30/1995		N	A	D003	H	0.0	15.0	0.0
									B	D003	H	0.0	10.0	0.0
	TSD	MI0000361204		MID092947928	09741896	01/30/1995		N	A	D003	H	0.0	15.0	0.0
									B	D003	H	0.0	10.0	0.0
MI3459505	GEN	MID017233594	MID092947928	MID092947928	09611917	12/22/1994		N	A	D001	H	0.0	80.0	0.0
	TSD	MID017233594		MID092947928	09651707	12/22/1994		N	A	D001	H	0.0	80.0	0.0
MI3459508	GEN	MID985614932	MID092947928	MID092947928	09652044	01/25/1995		N	A	F003	H	32.0	0.0	0.0
	TSD	MID985614932		MID092947928	09721234	01/25/1995		N	A	F003	H	32.0	0.0	0.0
MI3459509	GEN	MIT270013709	MID092947928	MID092947928	09652046	01/25/1995		N	A	D002	H	0.0	1300.0	0.0
									B	D009	H	0.0	170.0	0.0
									C	D006	H	0.0	90.0	0.0
									D	D003	H	0.0	110.0	0.0
	TSD	MIT270013709		MID092947928	09760415	01/25/1995		N	A	D002	H	0.0	1300.0	0.0
									B	D009	H	0.0	170.0	0.0
									C	D006	H	0.0	90.0	0.0
									D	D003	H	0.0	110.0	0.0
MI3459511	GEN	MID980682827	MID092947928	MID092947928	09652428	01/19/1995		N	A	D001	H	0.0	60.0	0.0
									B	D001	H	0.0	160.0	0.0
									C	029L	N	0.0	250.0	0.0
	TSD	MID980682827		MID092947928	09721507	01/19/1995		N	A	D001	H	0.0	60.0	0.0
									B	D001	H	0.0	160.0	0.0
									C	029L	N	0.0	250.0	0.0
MI3459550	GEN	OHD051623734	MID092947928	MID092947928	09590597	12/29/1994		N	A	D006	H	0.0	85.0	0.0
									B	F002	H	0.0	40.0	0.0
	TSD	OHD051623734		MID092947928	09601531	12/29/1994		N	A	D006	H	0.0	85.0	0.0
									B	F002	H	0.0	40.0	0.0

MEN01173

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459554	GEN	OHD982627515	MID092947928	MID092947928	09590601	12/29/1994		N	A	F003	H	0.0	25.0	0.0
									B	D005	H	0.0	25.0	0.0
									C	D009	H	0.0	20.0	0.0
	TSD	OHD982627515		MID092947928	09601527	12/29/1994		N	A	F003	H	0.0	25.0	0.0
									B	D005	H	0.0	25.0	0.0
									C	D009	H	0.0	20.0	0.0
MI3459555	GEN	MID980682827	MID092947928	MID092947928	09530771	12/08/1994		N	A	D001	H	0.0	30.0	0 0
									B	D001	H	0.0	45.0	0.0
									C	021L	N	0.0	250.0	0.0
									D	029L	N	0.0	200.0	0.0
	TSD	MID980682827		MID092947928	09601602	12/08/1994		N	A	D001	H	0.0	30.0	0.0
									B	D001	H	0.0	45.0	0.0
									C	021L	N	0.0	250 0	0.0
									D	029L	N	0.0	200.0	0.0
MI3459560	GEN	MID982064859	MID092947928	MID092947928	09531540	12/14/1994		N	A	F003	H	0.0	50 0	0.0
									B	U115	H	0.0	5.0	0.0
	TSD	MID982064859		MID092947928	09601592	12/14/1994		N	A	F003	H	0.0	50.0	0.0
									B	U115	H	0.0	5.0	0.0
MI3459561	GEN	MID985650969	MID092947928	MID092947928	09511953	12/09/1994		N	A	D007	H	0.0	2500.0	0.0
									B	F002	H	0.0	1800.0	0.0
									C	D004	H	0.0	450.0	0.0
									D	D004	H	0.0	400.0	0.0
	TSD	MID985650969		MID092947928	09601601	12/09/1994		N	A	D007	H	0.0	2500.0	0 0
									B	F002	H	0.0	1800.0	0.0
									C	D004	H	0.0	450.0	0.0
									D	D004	H	0.0	400.0	0.0
MI3459563	GEN	MID005174339	MID092947928	MID092947928	09590739	01/04/1995		N	A	D001	H	0.0	15.0	0.0
									B	F003	H	0.0	450.0	0.0
	TSD	MID005174339		MID092947928	09721308	01/04/1995		N	A	D001	H	0.0	15.0	0.0
									B	F003	H	0.0	450.0	0.0

MEN01174

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459566	GEN	MIT270010598	MID092947928	MID092947928	09670810	01/05/1995		N	A	D002	H	0.0	140.0	0.0
									B	D007	H	0.0	160.0	0.0
									C	D001	H	0.0	80.0	0.0
									D	D006	H	0.0	70.0	0.0
	TSD	MIT270010598		MID092947928	09721529	01/05/1995		N	A	D002	H	0.0	140.0	0.0
									B	D007	H	0.0	160.0	0.0
									C	D001	H	0.0	80.0	0.0
									D	D006	H	0.0	70.0	0.0
MI3459567	GEN	MIT270010598	MID092947928	MID092947928	09670809	01/05/1995		N	A	F003	H	0.0	520.0	0.0
									B	D001	H	0.0	1750.0	0.0
									C	D001	H	0.0	170.0	0.0
									D	021L	N	0.0	380.0	0.0
	TSD	MIT270010598		MID092947928	09721528	01/05/1995		N	A	F003	H	0.0	520.0	0.0
									B	D001	H	0.0	1750.0	0.0
									C	D001	H	0.0	170.0	0.0
									D	021L	N	0.0	380.0	0.0
MI3459570	GEN	MIT270010598	MID092947928	MID092947928	09670808	01/10/1995		N	A	F003	H	0.0	540.0	0.0
									B	F003	H	0.0	550.0	0.0
									C	F003	H	0.0	240.0	0.0
									D	F003	H	0.0	200.0	0.0
	TSD	MIT270010598		MID092947928	09721310	01/10/1995		N	A	F003	H	0.0	540.0	0.0
									B	F003	H	0.0	550.0	0.0
									C	F003	H	0.0	240.0	0.0
									D	F003	H	0.0	200.0	0 0
MI3459571	GEN	MIT270010598	MID092947928	MID092947928	09670807	01/10/1995		N	A	D022	H	0.0	360.0	0 0
									B	D002	H	0.0	160.0	0.0
									C	D002	H	0.0	100.0	0.0
									D	D011	H	0.0	100.0	0 0
	TSD	MIT270010598		MID092947928	09721309	01/10/1995		N	A	D022	H	0.0	360.0	0 0
									B	D002	H	0.0	160.0	0.0
									C	D002	H	0.0	100.0	0.0
									D	D011	H	0.0	100.0	0.0

MEN01175

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459572	GEN	MIT270010598	MID092947928	MID092947928	09670806	01/10/1995		N	A	D006	H	0.0	80.0	0.0
									B	D001	H	0.0	90.0	0.0
									C	021L	N	0.0	25.0	0.0
	TSD	MIT270010598		MID092947928	09721311	01/10/1995		N	A	D006	H	0.0	80.0	0.0
									B	D001	H	0.0	90.0	0.0
									C	021L	N	0.0	25.0	0.0
MI3459579	GEN	MID982063281	MID092947928	MID092947928	09652051	01/23/1995		N	A	F003	H	0.0	310.0	0.0
									B	D002	H	0.0	380.0	0.0
									C	F002	H	0.0	75.0	0.0
									D	F002	H	0.0	170.0	0.0
	TSD	MID982063281		MID092947928	09721516	01/23/1995		N	A	F003	H	0.0	310.0	0.0
									B	D002	H	0.0	380.0	0.0
									C	F002	H	0.0	75.0	0.0
									D	F002	H	0.0	170.0	0.0
MI3459581	GEN	MIT270013709	MID092947928	MID092947928	09531533	12/13/1994		N	A	F003	H	332.0	0.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	D006	H	0.0	15.0	0.0
									D	D009	H	0.0	100.0	0.0
	TSD	MIT270013709		MID092947928	09601594	12/13/1994		N	A	F003	H	332.0	0.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	D006	H	0.0	15.0	0.0
									D	D009	H	0.0	100.0	0.0
MI3459585	GEN	MID985614932	MID092947928	MID092947928	09531534	12/13/1994		N	A	F003	H	24.0	0.0	0.0
	TSD	MID985614932		MID092947928	09601595	12/13/1994		N	A	F003	H	24.0	0.0	0.0
MI3459586	GEN	MIT270010598	MID092947928	MID092947928	09670805	01/17/1995		N	A	F003	H	0.0	7000.0	0.0
									B	F005	H	0.0	500.0	0.0
									C	D001	H	0.0	200.0	0 0
									D	D001	H	0.0	40.0	0.0
	TSD	MIT270010598		MID092947928	09721521	01/17/1995		N	A	F003	H	0.0	7000.0	0.0
									B	F005	H	0.0	500.0	0.0
									C	D001	H	0.0	200.0	0.0
									D	D001	H	0.0	40.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459587	GEN	MIT270010598	MID092947928	MID092947928	09670803	01/17/1995	N		A	D007	H	0.0	300.0	0 0
									B	D009	H	0.0	1.0	0.0
									C	D003	H	0.0	1.0	0.0
									D	D010	H	0.0	200.0	0.0
	TSD	MIT270010598		MID092947928	09721523	01/17/1995	N		A	D007	H	0.0	300.0	0.0
									B	D009	H	0.0	1.0	0.0
									C	D003	H	0.0	1.0	0 0
									D	D010	H	0.0	200.0	0.0
MI3459588	GEN	MIT270010598	MID092947928	MID092947928	09670804	01/17/1995	N		A	D001	H	0.0	850.0	0.0
									B	D001	H	0.0	70.0	0.0
									C	D002	H	0.0	150.0	0.0
	TSD	MIT270010598		MID092947928	09721522	01/17/1995	N		A	D001	H	0.0	850.0	0.0
									B	D001	H	0.0	70.0	0.0
									C	D002	H	0.0	150.0	0.0
MI3459592	GEN	MIT270010598	MID092947928	MID092947928	09670800	01/24/1995	N		A	D001	H	0.0	400.0	0.0
									B	D001	H	0.0	470.0	0.0
									C	F003	H	0.0	275.0	0.0
									D	F003	H	0.0	210.0	0 0
	TSD	MIT270010598		MID092947928	09721231	01/24/1995	N		A	D001	H	0.0	400.0	0.0
									B	D001	H	0.0	470.0	0.0
									C	F003	H	0.0	275.0	0 0
									D	F003	H	0.0	210.0	0.0
MI3459593	GEN	MIT270010598	MID092947928	MID092947928	09670801	01/24/1995	N		A	D009	H	0.0	165.0	0 0
									B	D006	H	0.0	170.0	0.0
									C	F003	H	0.0	70.0	0.0
									D	006L	N	0.0	120.0	0.0
	TSD	MIT270010598		MID092947928	09721232	01/24/1995	N		A	D009	H	0.0	165.0	0 0
									B	D006	H	0.0	170.0	0 0
									C	F003	H	0.0	70.0	0.0
									D	006L	N	0.0	120.0	0.0
MI3459594	GEN	MIT270010598	MID092947928	MID092947928	09670802	01/24/1995	N		A	D001	H	0.0	45.0	0.0
									B	D001	H	0.0	75.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459594	GEN	MIT270010598	MID092947928	MID092947928	09670802	01/24/1995		N	C	D002	H	0.0	120.0	0.0
									D	D002	H	0.0	200.0	0.0
	TSD	MIT270010598		MID092947928	09721230	01/24/1995		N	A	D001	H	0.0	45.0	0.0
									B	D001	H	0.0	75.0	0.0
									C	D002	H	0.0	120.0	0.0
									D	D002	H	0.0	200.0	0 0
MI3459601	GEN	MI0000941781	MID092947928	MID092947928	09642164	12/15/1994		N	A	F003	H	0.0	20.0	0 0
									B	D022	H	0.0	15.0	0.0
									C	D002	H	0.0	25.0	0.0
									D	D009	H	0.0	10.0	0.0
	TSD	MI0000941781		MID092947928	09601590	12/15/1994		N	A	F003	H	0.0	20.0	0.0
									B	D022	H	0.0	15.0	0 0
									C	D002	H	0.0	25.0	0.0
									D	D009	H	0.0	10.0	0.0
MI3459602	GEN	MI0000941781	MID092947928	MID092947928	09642165	12/15/1994		N	A	D001	H	0.0	20.0	0.0
									B	D001	H	0.0	60.0	0 0
									C	D002	H	0.0	15.0	0.0
									D	D004	H	0.0	180.0	0 0
	TSD	MI0000941781		MID092947928	09601589	12/15/1994		N	A	D001	H	0.0	20.0	0.0
									B	D001	H	0.0	60.0	0.0
									C	D002	H	0.0	15.0	0 0
									D	D004	H	0.0	180.0	0.0
MI3459607	GEN	MIT270010598	MID092947928	MID092947928	09670799	01/31/1995		N	A	F003	H	0.0	450.0	0.0
									B	F003	H	0.0	250.0	0.0
									C	F003	H	0.0	100.0	0.0
									D	D001	H	0.0	270.0	0.0
	TSD	MIT270010598		MID092947928	09722146	01/31/1995		N	A	F003	H	0.0	450.0	0.0
									B	F003	H	0.0	250.0	0.0
									C	F003	H	0.0	100.0	0.0
									D	D001	H	0.0	270.0	0.0
MI3459608	GEN	MIT270010598	MID092947928	MID092947928	09670797	01/31/1995		N	A	D002	H	0.0	80.0	0.0
									B	D002	H	0.0	400.0	0.0
									C	D001	H	0.0	200.0	0.0
									D	F003	H	0.0	60.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459608	TSD	MIT270010598		MID092947928	09722145	01/31/1995		N	A	D002	H	0.0	80.0	0 0
									B	D002	H	0.0	400.0	0 0
									C	D001	H	0.0	200.0	0 0
									D	F003	H	0.0	60.0	0.0
MI3459609	GEN	MIT270010598	MID092947928	MID092947928	09670798	01/31/1995		N	A	D022	H	0.0	280.0	0 0
									B	D009	H	0.0	150.0	0.0
									C	D006	H	0.0	300.0	0.0
									D	021L	N	0.0	75.0	0.0
	TSD	MIT270010598		MID092947928	09722144	01/31/1995		N	A	D022	H	0.0	280.0	0.0
									B	D009	H	0.0	150.0	0 0
									C	D006	H	0.0	300.0	0.0
									D	021L	N	0.0	75.0	0.0
MI3459640	GEN	MIG000039389	MID092947928	MID092947928	09590630	12/16/1994		N	A	D006	H	0.0	250.0	0.0
	TSD	MIG000039389		MID092947928	09601587	12/16/1994		N	A	D006	H	0.0	250 0	0.0
MI3459641	GEN	MID017233594	MID092947928	MID092947928	09562711	12/22/1994		N	A	F005	H	0.0	20.0	0.0
									B	D001	H	0.0	40.0	0 0
									C	D002	H	0.0	1450.0	0.0
									D	D004	H	0.0	15.0	0.0
	TSD	MID017233594		MID092947928	09601510	12/22/1994		N	A	F005	H	0.0	20.0	0.0
									B	D001	H	0.0	40.0	0.0
									C	D002	H	0.0	1450.0	0.0
									D	D004	H	0.0	15.0	0.0
MI3459642	GEN	MID017233594	MID092947928	MID092947928	09562712	12/22/1994		N	A	001D	H	0.0	125.0	0.0
									B	D004	H	0.0	40.0	0.0
	TSD	MID017233594		MID092947928	09601511	12/22/1994		N	A	001D	H	0.0	125.0	0.0
									B	D004	H	0.0	40.0	0.0
MI3459643	GEN	MID121994842	MID092947928	MID092947928	09611039	12/27/1994		N	A	F003	H	0.0	150.0	0.0
									B	D009	H	0.0	75.0	0.0
	TSD	MID121994842		MID092947928	09601537	12/27/1994		N	A	F003	H	0.0	150.0	0.0
									B	D009	H	0.0	75.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T. MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459653	GEN	MID980682827	MID092947928	MID092947928	09571872	12/23/1994		N	A	D002	H	0.0	120.0	0.0
									B	D002	H	0.0	90.0	0.0
									C	F003	H	0.0	350.0	0 0
									D	F002	H	0.0	120.0	0.0
	TSD	MID980682827		MID092947928	09601541	12/23/1994		N	A	D002	H	0.0	120 0	0.0
									B	D002	H	0.0	90.0	0.0
									C	F003	H	0.0	350.0	0.0
									D	F002	H	0.0	120.0	0.0
MI3459655	GEN	MID069479632	MID092947928	MID092947928	09591245	12/27/1994		N	A	F005	H	0.0	1500.0	0.0
	TSD	MID069479632		MID092947928	09601539	12/27/1994		N	A	F005	H	0.0	1500.0	0.0
MI3459656	GEN	MID980902563	MID092947928	MID092947928	09570934	12/27/1994		N	A	D001	H	0.0	45.0	0 0
	TSD	MID980902563		MID092947928	09601536	12/27/1994		N	A	D001	H	0.0	45.0	0.0
MI3459657	GEN	MI6131490025	MID092947928	MID092947928	09571410	12/28/1994		N	A	D009	H	0.0	5.0	0.0
									B	D007	H	0.0	20.0	0.0
									C	D003	H	0.0	5.0	0.0
									D	D002	H	0.0	10.0	0.0
	TSD	MI6131490025		MID092947928	09601535	12/28/1994		N	A	D009	H	0.0	5.0	0.0
									B	D007	H	0.0	20.0	0.0
									C	D003	H	0.0	5.0	0.0
									D	D002	H	0.0	10.0	0.0
MI3459658	GEN	MI6131490025	MID092947928	MID092947928	09571411	12/28/1994		N	A	D001	H	0.0	450.0	0.0
									B	D001	H	0.0	60.0	0.0
									C	F002	H	0.0	45.0	0.0
	TSD	MI6131490025		MID092947928	09601533	12/28/1994		N	A	D001	H	0.0	450.0	0 0
									B	D001	H	0.0	60.0	0.0
									C	F002	H	0.0	45.0	0.0
MI3459659	GEN	MI6131490025	MID092947928	MID092947928	09630676	12/28/1994		N	A	D001	H	0.0	15.4	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TS .ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459659	TSD	MI6131490025		MID092947928	09601534	12/28/1994		N	A	D001	H	0.0	15.4	0.0
MI3459662	GEN	MIG000023730	MID092947928	MID092947928	09571254	12/30/1994		N	A	D001	H	0.0	1500.0	0.0
	TSD	MIG000023730		MID092947928	09601526	12/30/1994		N	A	D001	H	0.0	1500.0	0.0
MI3459663	GEN	MID074303082	MID092947928	MID092947928	09642163	01/04/1995		N	A	F005	H	0.0	900.0	0.0
	TSD	MID074303082		MID092947928	09721527	01/04/1995		N	A	F005	H	0.0	900.0	0.0
MI3459666	GEN	MID985650969	MID092947928	MID092947928	09560179	12/23/1994		N	A	D004	H	0.0	45.0	0.0
									B	D008	H	0.0	2400.0	0.0
									C	D001	H	0.0	700.0	0.0
	TSD	MID985650969		MID092947928	09601542	12/23/1994		N	A	D004	H	0.0	45.0	0.0
									B	D008	H	0.0	2400.0	0.0
									C	D001	H	0.0	700.0	0.0
MI3459667	TSD	MIG000009290		MID092947928	09601538	12/27/1994		N	A	F003	H	0.0	125.0	0.0
MI3459671	GEN	MID076358100	MID092947928	MID092947928	09610928	01/05/1995		N	A	F003	H	0.0	240.0	0.0
									B	D009	H	0.0	65.0	0.0
									C	021L	N	0.0	45.0	0.0
	TSD	MID076358100		MID092947928	09721530	01/05/1995		N	A	F003	H	0.0	240.0	0.0
									B	D009	H	0.0	65.0	0.0
									C	021L	N	0.0	45.0	0.0
MI3459674	TSD	MIG000021559		MID092947928	09760270	01/06/1995		N	A	F003	H	0.0	450.0	0.0
									B	D009	H	0.0	70.0	0.0
									C	D006	H	0.0	80.0	0.0
MI3459676	TSD	MID076386747		MID092947928	09721314	01/12/1995		N	A	F003	H	0.0	100.0	0.0
									B	D001	H	0.0	240.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D008	H	0.0	85.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459677	TSD	MID076386747		MID092947928	09721315	01/12/1995		N	A	F003	H	0.0	45.0	0.0
									B	D003	H	0.0	15.0	0.0
									C	029L	N	0.0	95.0	0.0
MI3459681	GEN	MIT270013709	MID092947928	MID092947928	09590664	01/04/1995		N	A	F003	H	540.0	0.0	0.0
									B	D003	H	0.0	3.0	0.0
									C	D003	H	2.0	0.0	0.0
									D	D003	H	0.0	1.0	0.0
	TSD	MIT270013709		MID092947928	09721525	01/04/1995		N	A	F003	H	540.0	0.0	0.0
									B	D003	H	0.0	3.0	0.0
									C	D003	H	2.0	0.0	0.0
									D	D003	H	0.0	1.0	0.0
MI3459682	GEN	MIT270013709	MID092947928	MID092947928	09590665	01/04/1995		N	A	D009	H	0.0	140.0	0.0
									B	021L	N	50.0	0.0	0.0
	TSD	MIT270013709		MID092947928	09721526	01/04/1995		N	A	D009	H	0.0	140.0	0.0
									B	021L	N	50.0	0 0	0.0
MI3459686	GEN	MIG000024068	MID092947928	MID092947928	09602750	01/06/1995		N	A	F003	H	0.0	230.0	0.0
	TSD	MIG000024068		MID092947928	09721532	01/06/1995		N	A	F003	H	0.0	230.0	0.0
MI3459692	GEN	MID072576556	MID092947928	MID092947928	09630032	01/17/1995		N	A	F003	H	0.0	60.0	0.0
									B	D002	H	0.0	15.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	017L	N	0.0	1450.0	0.0
	TSD	MID072576556		MID092947928	09721519	01/17/1995		N	A	F003	H	0.0	60.0	0.0
									B	D002	H	0.0	15.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	017L	N	0.0	1450.0	0.0
MI3459693	GEN	MI5120507327	MID092947928	MID092947928	09811314	01/19/1995		N	A	F003	H	0.0	170.0	0.0
									B	D001	H	0.0	140.0	0.0
									C	D001	H	0.0	15.0	0 0
									D	D003	H	0.0	1.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION, MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459693	TSD	MI5120507327		MID092947928	09820837	01/19/1995		N	A	F003	H	0.0	170.0	0.0
									B	D001	H	0.0	140.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D003	H	0.0	1.0	0.0
MI3459694	GEN	MI5120507327	MID092947928	MID092947928	09811313	01/19/1995		N	A	D008	H	0.0	550.0	0.0
									B	D022	H	0.0	100.0	0.0
									C	D002	H	0.0	85.0	0.0
									D	021L	N	0.0	60.0	0.0
	TSD	MI5120507327		MID092947928	09820836	01/19/1995		N	A	D008	H	0.0	550.0	0.0
									B	D022	H	0.0	100.0	0.0
									C	D002	H	0.0	85.0	0.0
									D	021L	N	0.0	60.0	0.0
MI3459715	GEN	MIG000017849	MID092947928	MID092947928	09611948	01/13/1995		N	A	F003	H	0.0	350.0	0.0
	TSD	MIG000017849		MID092947928	09721316	01/13/1995		N	A	F003	H	0.0	350.0	0.0
MI3459717	GEN	MIG000041114	MID092947928	MID092947928	09701919	01/24/1995		N	A	D007	H	0.0	10.0	0.0
									B	F003	H	0.0	110.0	0.0
									C	D001	H	0.0	10.0	0.0
	TSD	MIG000041114		MID092947928	09760416	01/24/1995		N	A	D007	H	0.0	10.0	0.0
									B	F003	H	0.0	110.0	0.0
									C	D001	H	0.0	10.0	0 0
MI3459718	GEN	MID982621153	MID092947928	MID092947928	09701754	01/24/1995		N	A	F003	H	0.0	10.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	D006	H	0.0	80.0	0.0
	TSD	MID982621153		MID092947928	09802701	01/24/1995		N	A	F003	H	0.0	10.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	D006	H	0.0	80.0	0.0
MI3459720	GEN	MID060179595	MID092947928	MID092947928	09761625	01/31/1995		N	A	F003	H	0.0	450.0	0.0
									B	D011	H	0.0	40.0	0.0
									C	D009	H	0.0	45.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459724	GEN	MID980682827	MID092947928	MID092947928	09652427	01/19/1995		N	A	D008	H	0.0	150.0	0.0
									B	D001	H	0.0	80.0	0.0
									C	F003	H	0.0	75.0	0.0
									D	D008	H	0.0	20.0	0.0
	TSD	MID980682827		MID092947928	09721508	01/19/1995		N	A	D008	H	0.0	150.0	0.0
									B	D001	H	0.0	80.0	0.0
									C	F003	H	0.0	75.0	0.0
									D	D008	H	0.0	20.0	0.0
MI3459725	GEN	MID980682827	MID092947928	MID092947928	09652429	01/19/1995		N	A	D001	H	0.0	25.0	0.0
									B	D002	H	0.0	10.0	0.0
									C	U009	H	0.0	10.0	0.0
									D	006L	N	0.0	15.0	0.0
	TSD	MID980682827		MID092947928	09721511	01/19/1995		N	A	D001	H	0.0	25.0	0.0
									B	D002	H	0.0	10.0	0.0
									C	U009	H	0.0	10.0	0.0
									D	006L	N	0.0	15.0	0.0
MI3459728	GEN	MID053343976	MID092947928	MID092947928	09772628	01/20/1995		N	A	D001	H	0.0	10.0	0.0
	TSD	MID053343976		MID092947928	09780798	01/20/1995		N	A	D001	H	0.0	10.0	0.0
MI3459729	GEN	MIG000041150	MID092947928	MID092947928	09670343	01/17/1995		N	A	U036	H	0.0	205.0	0.0
									B	U036	H	0.0	10.0	0.0
	TSD	MIG000041150		MID092947928	09741980	01/17/1995		N	A	U036	H	0.0	205.0	0.0
									B	U036	H	0.0	10.0	0.0
MI3459732	GEN	MIG000040632	MID092947928	MID092947928	09670387	01/17/1995		N	A	D001	H	0.0	150.0	0.0
	TSD	MIG000040632		MID092947928	09721520	01/17/1995		N	A	D001	H	0.0	150.0	0.0
MI3459733	GEN	MID981961550	MID092947928	MID092947928	09670341	01/18/1995		N	A	F003	H	0.0	220.0	0.0
									B	F003	H	0.0	40.0	0.0
									C	D002	H	0.0	170.0	0.0
									D	D002	H	0.0	540.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459733	TSD	MID981961550		MID092947928	09760376	01/18/1995		N	A	F003	H	0.0	220.0	0.0
									B	F003	H	0.0	40.0	0.0
									C	D002	H	0.0	170.0	0.0
									D	D002	H	0.0	540.0	0.0
MI3459734	GEN	MID981961550	MID092947928	MID092947928	09670340	01/18/1995		N	A	D009	H	0.0	50.0	0.0
									B	D002	H	0.0	150.0	0.0
									C	005L	N	0.0	55.0	0.0
	TSD	MID981961550		MID092947928	09760757	01/18/1995		N	A	D009	H	0.0	50.0	0.0
									B	D002	H	0.0	150.0	0.0
									C	005L	N	0.0	55.0	0.0
MI3459741	GEN	MIG000025283	MID092947928	MID092947928	09632078	01/20/1995		N	A	D001	H	0.0	170.0	0.0
									B	D001	H	0.0	10.0	0.0
									C	D002	H	0.0	85.0	0.0
									D	D001	H	0.0	250.0	0.0
	TSD	MIG000025283		MID092947928	09760271	01/20/1995		N	A	D001	H	0.0	170.0	0.0
									B	D001	H	0.0	10.0	0.0
									C	D002	H	0.0	85.0	0.0
									D	D001	H	0.0	250.0	0.0
MI3459743	GEN	MIG000041173	MID092947928	MID092947928	09681107	01/23/1995		N	A	D001	H	0.0	950.0	0.0
									B	D001	H	0.0	10.0	0.0
	TSD	MIG000041173		MID092947928	09721517	01/23/1995		N	A	D001	H	0.0	950.0	0.0
									B	D001	N	0.0	10.0	0.0
MI3459745	GEN	MID006013643	MID092947928	MID092947928	09642236	01/20/1995		N	A	F005	H	1.0	0.0	0.0
									B	F005	H	1.0	0.0	0.0
									C	D001	H	0.0	1.0	0.0
	TSD	MID006013643		MID092947928	09721512	01/20/1995		N	A	F005	H	1.0	0.0	0.0
									B	F005	H	1.0	0.0	0.0
									C	D001	H	0.0	1.0	0.0
MI3459750	GEN	MID980682827	MID092947928	MID092947928	09652426	01/23/1995		N	A	D002	H	0.0	45.0	0.0
									B	F005	H	0.0	80.0	0.0
									C	D002	H	0.0	10.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3459750	GEN	MID980682827	MID092947928	MID092947928	09652426	01/23/1995		N	D	D001	H	0.0	5.0	0.0
	TSD	MID980682827		MID092947928	09721515	01/23/1995		N	A	D002	H	0.0	45.0	0.0
									B	F005	H	0.0	80.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	D001	H	0.0	5.0	0.0
MI3459752	GEN	MIT270013709	MID092947928	MID092947928	09652045	01/25/1995		N	A	F003	H	432.0	0.0	0 0
									B	F003	H	50.0	0.0	0.0
									C	D001	H	2.0	0.0	0.0
									D	D001	H	0.0	5.0	0.0
	TSD	MIT270013709		MID092947928	09721235	01/25/1995		N	A	F003	H	432.0	0 0	0.0
									B	F003	H	50.0	0.0	0 0
									C	D001	H	2.0	0.0	0 0
									D	D001	H	0.0	5.0	0.0
MI3459754	GEN	MID000718619	MID092947928	MID092947928	09671875	01/26/1995		N	A	D001	H	0.0	250.0	0 0
	TSD	MID000718619		MID092947928	09721237	01/26/1995		N	A	D001	H	0.0	250.0	0.0
MI3459756	GEN	MID985650969	MID092947928	MID092947928	09660079	01/27/1995		N	A	D004	H	0.0	100.0	0.0
									B	D004	H	0.0	360.0	0.0
									C	D008	H	0.0	1600.0	0.0
									D	D001	H	0.0	1500.0	0.0
	TSD	MID985650969		MID092947928	09721500	01/27/1995		N	A	D004	H	0.0	100.0	0.0
									B	D004	H	0.0	360.0	0.0
									C	D008	H	0.0	1600.0	0 0
									D	D001	H	0.0	1500.0	0 0
MI3459764	GEN	MI0000361204	MID092947928	MID092947928	09692110	01/30/1995		N	A	D001	H	0.0	90.0	0.0
									B	D001	H	0.0	30.0	0 0
									C	D003	H	0.0	15 0	0.0
									D	D003	H	0.0	5.0	0.0
	TSD	MI0000361204		MID092947928	09741895	01/30/1995		N	A	D001	H	0.0	90.0	0 0
									B	D001	H	0.0	30.0	0.0
									C	D003	H	0.0	15.0	0.0
									D	D003	H	0.0	5.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3495793	GEN	MID084306802	MID092947928	MID092947928	09772630	01/11/1995		N	A	F003	H	34.0	0.0	0 0
									B	D002	H	14.0	0.0	0.0
									C	D001	H	56.0	0.0	0.0
									D	D001	H	13.0	0.0	0 0
	TSD	MID084306802		MID092947928	09780801	01/11/1995		N	A	F003	H	34.0	0 0	0 0
									B	D002	H	14.0	0 0	0 0
									C	D001	H	56.0	0.0	0 0
									D	D001	H	13.0	0.0	0 0
MI3495795	GEN	MID084306802	MID092947928	MID092947928	09652233	01/11/1995		N	A	D001	H	0.0	5.0	0 0
									B	D009	H	0.0	38 0	0 0
	TSD	MID084306802		MID092947928	09721313	01/11/1995		N	A	D001	H	0.0	5 0	0 0
									B	D009	H	0.0	38 0	0 0
MI3501605	TSD	OHD100063023		MID092947928	09582166	11/01/1994		N	A	D008	H	0.0	30.0	0 0
									B	U165	H	0.0	50.0	0 0
									C	D009	H	0.0	10.0	0 0
									D	D001	H	0.0	10.0	0 0
MI3501606	TSD	OHD100063023		MID092947928	09582776	11/01/1994		N	A	D001	H	0.0	10 0	0 0
									B	006L	N	0.0	200.0	0 0
MI3501607	TSD	OHD055886584		MID092947928	09542228	11/01/1994		N	A	D009	H	0.0	20.0	0 0
									B	D001	H	0.0	20.0	0 0
MI3501608	TSD	OHD100446830		MID092947928	09582775	11/01/1994		N	A	P109	H	0.0	30.0	0 0
									B	P066	H	0.0	50.0	0 0
MI3501609	TSD	OHG000039978		MID092947928	09542226	11/01/1994		N	A	D001	H	0.0	15.0	0 0
									B	D002	H	0.0	15.0	0 0
									C	D007	H	0.0	10 0	0.0
									D	D002	H	0.0	25 0	0 0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T. MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3501610	TSD	OHG000039978		MID092947928	09542225	11/01/1994		N	A	D001	H	0.0	10.0	0.0
MI3501613	GEN	OHD982210783	SCD987598240	MID092947928	09730341	10/04/1994		N	A	D005	H	0.0	20.0	0.0
									B	F003	H	0.0	25.0	0.0
									C	D009	H	0.0	10.0	0.0
									D	P106	H	0.0	15.0	0 0
	TSD	OHD982210783		MID092947928	09542300	11/01/1994		N	A	D005	H	0.0	20.0	0.0
									B	F003	H	0.0	25.0	0.0
									C	D009	H	0.0	10.0	0.0
									D	P106	H	0.0	15.0	0 0
MI3501626	TSD	WVD082243502		MID092947928	09542303	11/01/1994		N	A	D001	H	0.0	10.0	0.0
									B	D002	H	0.0	50.0	0.0
									C	D002	H	0.0	20.0	0.0
									D	D007	H	0.0	15.0	0.0
MI3501627	TSD	WVD082243502		MID092947928	09542302	11/01/1994		N	A	F003	H	0.0	20.0	0.0
									B	D002	H	0.0	20.0	0.0
									C	U223	H	0.0	20.0	0.0
									D	D009	H	0.0	20.0	0.0
MI3501633	TSD	OH9360010368		MID092947928	09542231	11/01/1994		N	A	D001	H	0.0	20.0	0.0
									B	P105	H	0.0	10.0	0.0
									C	D009	H	0.0	20.0	0.0
									D	D009	H	0.0	35.0	0.0
MI3501634	GEN	OHD070757620	SCD987598240	MID092947928	09351001	10/10/1994		N	A	U188	H	0.0	20.0	0.0
									B	D001	H	0.0	15.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D009	H	0.0	40.0	0.0
	TSD	OHD070757620		MID092947928	09542224	11/01/1994		N	A	U188	H	0.0	20.0	0.0
									B	D001	H	0.0	15.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D009	H	0.0	40.0	0.0
MI3501636	GEN	OHD070757620	SCD987598240	MID092947928	09351000	10/10/1994		N	A	D001	H	0.0	15.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T[illegible] ,ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3501636	GEN	OHD070757620	SCD987598240	MID092947928	09351000	10/10/1994		N	B	D002	H	0.0	15.0	0.0
									C	F005	H	0.0	15.0	0.0
									D	F005	H	0.0	15.0	0.0
	TSD	OHD070757620		MID092947928	09542301	11/01/1994		N	A	D001	H	0.0	15.0	0.0
									B	D002	H	0.0	15.0	0.0
									C	F005	H	0.0	15.0	0.0
									D	F005	H	0.0	15.0	0.0
MI3501639	GEN	OHD054169354	SCD987598240	MID092947928	09490254	10/28/1994		N	A	D009	H	0.0	105.0	0.0
									B	D002	H	0.0	350.0	0.0
									C	D002	H	0.0	150.0	0.0
									D	D009	H	0.0	100.0	0.0
	TSD	OHD054169354	SCD987598240	MID092947928	09542340	11/21/1994		N	A	D009	H	0.0	105.0	0.0
									B	D002	H	0.0	350.0	0.0
									C	D002	H	0.0	150.0	0.0
									D	D009	H	0.0	100.0	0.0
MI3501641	GEN	OHD054169354	SCD987598240	MID092947928	09490253	10/28/1994		N	A	D001	H	0.0	15.0	0.0
									B	D002	H	0.0	10.0	0.0
									C	D001	H	0.0	10.0	0.0
									D	029L	N	0.0	10.0	0.0
	TSD	OHD054169354	SCD987598240	MID092947928	09542341	11/21/1994		N	A	D001	H	0.0	15.0	0.0
									B	D002	H	0.0	10.0	0.0
									C	D001	H	0.0	10.0	0.0
									D	029L	N	0.0	10.0	0.0
MI3501643	GEN	OHD066060609	OHD987023090	MID092947928	09560743	12/16/1994		N	A	D002	H	0.0	75.0	0.0
	TSD	OHD066060609		MID092947928	09601582	12/19/1994		N	A	D002	H	0.0	75.0	0.0
MI3501644	GEN	OHD071124788	OHD987023090	MID092947928	09591682	01/04/1995		N	A	D001	H	0.0	15.0	0.0
	TSD	OHD071124788		MID092947928	09721229	01/13/1995		N	A	D001	H	0.0	15.0	0.0
MI3593515	GEN	MIT270010598	MID092947928	MID092947928	09500481	11/30/1994		N	A	D001	H	0.0	250.0	0.0
									B	F003	H	0.0	2450.0	0.0
									C	D001	H	0.0	150.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3593515	GEN	MIT270010598	MID092947928	MID092947928	09500481	11/30/1994		N	D	D009	H	0.0	5.0	0 0
	TSD	MIT270010598		MID092947928	09542335	11/30/1994		N	A	D001	H	0.0	250.0	0.0
									B	F003	H	0.0	2450.0	0 0
									C	D001	H	0.0	150.0	0 0
									D	D009	H	0.0	5.0	0.0
MI3593518	GEN	MIT270010598	MID092947928	MID092947928	09500484	11/30/1994		N	A	D006	H	0.0	80.0	0.0
									B	029L	N	0.0	800.0	0 0
									C	029L	N	0.0	150.0	0.0
	TSD	MIT270010598		MID092947928	09542332	11/30/1994		N	A	D006	H	0.0	80.0	0.0
									B	029L	N	0.0	800.0	0.0
									C	029L	N	0.0	150.0	0.0
MI3593642	GEN	MID982608044	MID092947928	MID092947928	09351710	10/12/1994		N	A	D001	H	0.0	280.0	0.0
									B	D008	H	0.0	100 0	0.0
									C	D003	H	0.0	35.0	0.0
	TSD	MID982608044		MID092947928	09412528	10/12/1994		N	A	D001	H	0.0	280.0	0.0
									B	D008	H	0.0	100.0	0.0
									C	D003	H	0.0	35.0	0.0
MI3593643	GEN	MID982608044	MID092947928	MID092947928	09430122	11/07/1994		N	A	D001	H	0.0	320.0	0.0
									B	D008	H	0.0	80.0	0.0
									C	D002	H	0.0	160.0	0.0
	TSD	MID982608044		MID092947928	09542162	11/07/1994		N	A	D001	H	0.0	320.0	0 0
									B	D008	H	0.0	80.0	0 0
									C	D002	H	0.0	160.0	0.0
MI3593644	GEN	MID982608044	MID092947928	MID092947928	09482010	11/29/1994		N	A	D001	H	0.0	300.0	0.0
									B	D002	H	0.0	240.0	0 0
	TSD	MID982608044		MID092947928	09542328	11/29/1994		N	A	D001	H	0.0	300.0	0.0
									B	D002	H	0.0	240.0	0.0
MI3593645	GEN	MID982608044	MID092947928	MID092947928	09590620	01/03/1995		N	A	D001	H	0.0	200.0	0 0
									B	D008	H	0.0	120.0	0.0
									C	D002	H	0.0	80.0	0 0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T: .ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3593645	TSD	MID982608044		MID092947928	09721307	01/03/1995		N	A	D001	H	0.0	200.0	0.0
									B	D008	H	0.0	120.0	0.0
									C	D002	H	0.0	80.0	0.0
MI3593647	GEN	MID982608044	MID092947928	MID092947928	09670023	01/31/1995		N	A	D001	H	0.0	320.0	0.0
									B	D008	H	0.0	225.0	0.0
									C	D002	H	0.0	135.0	0 0
MI3593661	TSD	MID985623941		MID092947928	09542306	11/01/1994		N	A	F003	H	0.0	15.0	0 0
MI3593662	TSD	MIG000002008		MID092947928	09412490	10/06/1994		N	A	029L	N	0.0	55.0	0.0
									B	D001	H	0.0	5.0	0.0
MI3593663	GEN	MID005462692	MID092947928	MID092947928	09331778	10/10/1994		N	A	D008	H	0.0	55.0	0.0
									B	D011	H	0.0	20.0	0.0
									C	D002	H	0.0	15.0	0.0
	TSD	MID005462692		MID092947928	09412516	10/10/1994		N	A	D008	H	0.0	55.0	0.0
									B	D011	H	0.0	20.0	0.0
									C	D002	H	0.0	15.0	0.0
MI3593664	GEN	MIG000033355	MID092947928	MID092947928	09490117	10/26/1994		N	A	D002	H	0.0	15.0	0.0
									B	D002	H	0.0	10.0	0.0
									C	D009	H	0.0	15.0	0.0
	TSD	MIG000033355		MID092947928	09541923	10/26/1994		N	A	D002	N	0.0	15.0	0.0
									B	D002	N	0.0	10.0	0.0
									C	D009	N	0.0	15.0	0 0
MI3593665	GEN	MID985614932	MID092947928	MID092947928	09392671	10/31/1994		N	A	F003	H	43.0	0.0	0.0
	TSD	MID985614932		MID092947928	09450702	10/31/1994		N	A	F003	H	43.0	0.0	0.0
MI3593670	GEN	MID980682827	MID092947928	MID092947928	09482620	11/18/1994		N	A	021L	N	0.0	20.0	0.0
									B	D001	H	0.0	1.0	0.0
									C	F005	H	0.0	800.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3593670	TSD	MID980682827		MID092947928	09542354	11/18/1994		N	A	021L	N	0.0	20.0	0.0
									B	D001	H	0.0	1.0	0.0
									C	F005	H	0.0	800.0	0.0
MI3593700	GEN	MIT270010598	MID092947928	MID092947928	09500483	11/30/1994		N	A	D002	H	0.0	70.0	0.0
									B	D002	H	0.0	320.0	0.0
									C	D002	H	0.0	30.0	0.0
									D	D009	H	0.0	120.0	0 0
	TSD	MIT270010598		MID092947928	09542333	11/30/1994		N	A	D002	H	0.0	70.0	0.0
									B	D002	H	0.0	320.0	0.0
									C	D002	H	0.0	30.0	0.0
									D	D009	H	0.0	120.0	0.0
MI3593799	GEN	MIT270010598	MID092947928	MID092947928	09500485	11/30/1994		N	A	P106	H	0.0	40.0	0.0
	TSD	MIT270010598		MID092947928	09542337	11/30/1994		N	A	P106	H	0.0	40.0	0.0
MI3593803	GEN	MI0000941781	MID092947928	MID092947928	09650389	12/15/1994		N	A	D003	H	0.0	1.0	0.0
									B	D001	H	0.0	15.0	0.0
	TSD	MI0000941781		MID092947928	09601591	12/15/1994		N	A	D003	H	0.0	1.0	0.0
									B	D001	H	0.0	15.0	0.0
MI3593804	GEN	OHD982627515	MID092947928	MID092947928	09590600	12/29/1994		N	A	D003	H	0.0	15.0	0.0
	TSD	OHD982627515		MID092947928	09601528	12/29/1994		N	A	D003	H	0.0	15.0	0.0
MI3593817	GEN	MIT270010598	MID092947928	MID092947928	09392549	10/04/1994		N	A	D022	H	0.0	100.0	0.0
									B	F003	H	0.0	275.0	0.0
									C	F003	H	0.0	120.0	0.0
									D	D007	H	0.0	20.0	0.0
	TSD	MIT270010598		MID092947928	09412483	10/04/1994		N	A	D022	H	0.0	100.0	0.0
									B	F003	H	0.0	275.0	0.0
									C	F003	H	0.0	120.0	0 0
									D	D007	H	0.0	20.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3593818	GEN	MIT270010598	MID092947928	MID092947928	09392548	10/04/1994		N	A	F003	H	0.0	200.0	0.0	
									B	F003	H	0.0	100.0	0.0	700
									C	D002	H	0.0	290.0	0.0	
									D	D001	H	0.0	110.0	0.0	
	TSD	MIT270010598		MID092947928	09412439	10/04/1994		N	A	F003	H	0.0	200.0	0.0	
									B	F003	H	0.0	100.0	0.0	
									C	D002	H	0.0	290.0	0.0	
									D	D001	H	0.0	110.0	0.0	
MI3593819	GEN	MIT270010598	MID092947928	MID092947928	09460469	10/04/1994		N	A	D006	H	0.0	70.0	0.0	
									B	D008	H	0.0	500.0	0.0	610
									C	021L	N	0.0	40.0	0.0	
	TSD	MIT270010598		MID092947928	09412484	10/04/1994		N	A	D006	H	0.0	70.0	0.0	
									B	D008	H	0.0	500.0	0.0	
									C	021L	N	0.0	40.0	0.0	
MI3593822	GEN	MID005174339	MID092947928	MID092947928	09331275	10/05/1994		N	A	F003	H	0.0	350.0	0.0	410
									B	D001	H	0.0	60.0	0.0	
	TSD	MID005174339		MID092947928	09412443	10/05/1994		N	A	F003	H	0.0	350.0	0.0	
									B	D001	H	0.0	60.0	0.0	
MI3593827	GEN	MIT270010598	MID092947928	MID092947928	09392553	10/11/1994		N	A	F003	H	0.0	1150.0	0.0	
									B	D001	H	0.0	550.0	0.0	2410
									C	F003	H	0.0	410.0	0.0	
									D	F003	H	0.0	300.0	0.0	
	TSD	MIT270010598		MID092947928	09412519	10/11/1994		N	A	F003	H	0.0	1150.0	0.0	
									B	D001	H	0.0	550.0	0.0	
									C	F003	H	0.0	410.0	0.0	
									D	F003	H	0.0	300.0	0.0	
MI3593828	GEN	MIT270010598	MID092947928	MID092947928	09392550	10/11/1994		N	A	D002	H	0.0	130.0	0.0	
									B	D002	H	0.0	90.0	0.0	700
									C	D008	H	0.0	340.0	0.0	
									D	D001	H	0.0	240.0	0.0	
	TSD	MIT270010598		MID092947928	09412520	10/11/1994		N	A	D002	H	0.0	130.0	0.0	
									B	D002	H	0.0	90.0	0.0	
									C	D008	H	0.0	340.0	0.0	

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WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3593828	TSD	MIT270010598		MID092947928	09412520	10/11/1994		N	D	D001	H	0.0	240.0	0.0	240
MI3593829	GEN	MIT270010598	MID092947928	MID092947928	09392551	10/11/1994		N	A	D001	H	0.0	90.0	0.0	
									B	D001	H	0.0	110.0	0.0	530
									C	D001	H	0.0	40.0	0.0	
									D	D006	H	0.0	290.0	0.0	
	TSD	MIT270010598		MID092947928	09412518	10/11/1994		N	A	D001	H	0.0	90.0	0.0	
									B	D001	H	0.0	110.0	0.0	
									C	D001	H	0.0	40.0	0.0	
									D	D006	H	0.0	290.0	0.0	
MI3593849	GEN	MIT270010598	MID092947928	MID092947928	09392556	10/18/1994		N	A	F003	H	0.0	720.0	0.0	
									B	D001	H	0.0	950.0	0.0	2210
									C	D001	H	0.0	300.0	0.0	
									D	F003	H	0.0	240.0	0.0	
	TSD	MIT270010598		MID092947928	09412474	10/18/1994		N	A	F003	H	0.0	720.0	0.0	
									B	D001	H	0.0	950.0	0.0	
									C	D001	H	0.0	300.0	0.0	
									D	F003	H	0.0	240.0	0.0	
MI3593897	GEN	MID980902563	MID092947928	MID092947928	09460908	11/16/1994		N	A	D001	H	0.0	5.0	0.0	
									B	D009	H	0.0	5.0	0.0	
	TSD	MID980902563		MID092947928	09542172	11/16/1994		N	A	D001	H	0.0	5.0	0.0	
									B	D009	H	0.0	5.0	0.0	
MI3593898	GEN	MID005358783	MID092947928	MID092947928	09510447	11/14/1994		N	A	D001	H	0.0	5.0	0.0	
	TSD	MID005358783		MID092947928	09542156	11/14/1994		N	A	D001	H	0.0	5.0	0.0	
MI3593899	GEN	MIG000008982	MID092947928	MID092947928	09462297	11/03/1994		N	A	D003	H	0.0	3.0	0.0	
									B	D001	H	0.0	3.0	0.0	
									C	D003	H	0.0	10.0	0.0	
	TSD	MIG000008982		MID092947928	09542321	11/03/1994		N	A	D003	H	0.0	3.0	0.0	
									B	D001	H	0.0	3.0	0.0	
									C	D003	H	0.0	10.0	0.0	

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3593950	GEN	MIT270010598	MID092947928	MID092947928	09392555	10/18/1994		N	A	F003	H	0.0	80.0	0.0	
									B	D001	H	0.0	145.0	0.0	415
									C	D002	H	0.0	370.0	0.0	
									D	D001	H	0.0	20.0	0.0	
	TSD	MIT270010598		MID092947928	09412473	10/18/1994		N	A	F003	H	0.0	80.0	0.0	
									B	D001	H	0.0	145.0	0.0	
									C	D002	H	0.0	370.0	0.0	
									D	D001	H	0.0	20.0	0.0	
MI3593951	GEN	MIT270010598	MID092947928	MID092947928	09392554	10/18/1994		N	A	F003	H	0.0	270.0	0.0	
									B	D006	H	0.0	75.0	0.0	
									C	D022	H	0.0	440.0	0.0	1185
									D	D009	H	0.0	400.0	0.0	
	TSD	MIT270010598		MID092947928	09412475	10/18/1994		N	A	F003	H	0.0	270.0	0.0	
									B	D006	H	0.0	75.0	0 0	
									C	D022	H	0.0	440.0	0.0	
									D	D009	H	0.0	400.0	0.0	
MI3593953	GEN	MID982063281	MID092947928	MID092947928	09390451	10/17/1994		N	A	F003	H	0.0	310.0	0 0	
									B	F002	H	0.0	100.0	0.0	
									C	D002	H	0.0	175.0	0.0	465
									D	D002	H	0.0	20.0	0.0	
	TSD	MID982063281		MID092947928	09412469	10/17/1994		N	A	F003	H	0.0	310.0	0 0	
									B	F002	H	0.0	100.0	0.0	
									C	D002	H	0.0	175.0	0.0	
									D	D002	H	0.0	20.0	0.0	
MI3593956	GEN	MID075444281	MID092947928	MID092947928	09372479	10/21/1994		N	A	029L	N	0.0	300.0	0 0	
									B	D009	H	0.0	150.0	0.0	
									C	D009	H	0.0	60.0	0.0	810
									D	F003	H	0.0	350.0	0 0	
	TSD	MID075444281		MID092947928	09412463	10/21/1994		N	A	029L	N	0.0	300.0	0.0	
									B	D009	H	0.0	150.0	0.0	
									C	D009	H	0.0	60.0	0.0	
									D	F003	H	0.0	350.0	0.0	

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WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3593958	GEN	MIT270010598	MID092947928	MID092947928	09392559	10/25/1994		N	A	F003	H	0.0	320.0	0.0	
									B	F003	H	0.0	340.0	0.0	
									C	D001	H	0.0	850.0	0.0	1600
									D	D001	H	0.0	90.0	0.0	
	TSD	MIT270010598		MID092947928	09450695	10/25/1994		N	A	F003	H	0.0	320.0	0.0	
									B	F003	H	0.0	340.0	0.0	
									C	D001	H	0.0	850.0	0.0	
									D	D001	H	0.0	90.0	0.0	
MI3593959	GEN	MIT270010598	MID092947928	MID092947928	09392558	10/25/1994		N	A	F003	H	0.0	190.0	0.0	
									B	D001	H	0.0	175.0	0.0	
									C	D002	H	0.0	150.0	0.0	658
									D	D004	H	0.0	140.0	0.0	
	TSD	MIT270010598		MID092947928	09450696	10/25/1994		N	A	F003	H	0.0	190.0	0.0	
									B	D001	H	0.0	175.0	0.0	
									C	D002	H	0.0	150.0	0.0	
									D	D004	H	0.0	140.0	0.0	
MI3593960	GEN	MIT270010598	MID092947928	MID092947928	09392557	10/25/1994		N	A	D022	H	0.0	50.0	0.0	75
									B	021L	N	0.0	25.0	0.0	
	TSD	MIT270010598		MID092947928	09450697	10/25/1994		N	A	D022	H	0.0	50.0	0.0	
									B	021L	N	0.0	25.0	0.0	
MI3637814	GEN	RIP000014559	MID982606287	MID092947928	09740667	01/25/1995		N	A	P022	H	30.0	0.0	0.0	
									B	D001	N	5.0	0.0	0.0	
									C	D001	N	5.0	0.0	0.0	
									D	D002	H	30.0	0.0	0.0	
MI3637815	GEN	RIP000014559	MID982606287	MID092947928	09702402	01/25/1995		N	A	D002	N	5.0	0.0	0.0	
									B	D002	N	5.0	0.0	0.0	
									C	P012	N	5.0	0.0	0.0	
MI3638558	GEN	MD8211620267	OHD009865825	MID092947928	09530574	12/08/1994		N	A	U151	H	0.0	3.0	0.0	
									B	D009	H	0.0	1.0	0.0	
	TSD	MD8211620267		MID092947928	09601593	12/13/1994		N	A	U151	H	0.0	3.0	0.0	
									B	D009	H	0.0	1.0	0.0	

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WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3638565	GEN	PA6213820503	OHD009865825	MID092947928	09570973	12/21/1994		N	A	D002	H	0.0	16.0	0 0	
	TSD	PA6213820503		MID092947928	09601532	12/28/1994		N	A	D002	H	0.0	16.0	0.0	
MI3638574	GEN	MD8211620267	OHD009865825	MID092947928	09671247	01/25/1995		N	A	D001	H	0.0	2.0	0 0	
									B	D009	H	0.0	14.0	0.0	
	TSD	MD8211620267		MID092947928	09721317	01/30/1995		N	A	D001	H	0.0	2.0	0.0	
									B	D009	H	0.0	14.0	0.0	
MI3641207	GEN	MID005378179	MID092947928	MID092947928	09482332	11/16/1994		N	A	D009	H	0.0	24.0	0.0	
	TSD	MID005378179		MID092947928	09542170	11/16/1994		N	A	D009	H	0.0	24.0	0 0	
MI3641244	GEN	OH0000705707	INT190010397	MID092947928	09462379	10/25/1994		N	A	D001	H	0.0	8.0	0.0	
									B	D002	H	2.0	0.0	0.0	14
									C	P018	H	0.0	6.0	0 0	
	TSD	OH0000705707	MID096963194	MID092947928	09412786	10/28/1994		N	A	D001	H	0.0	8.0	0.0	
									B	D002	H	2.0	0.0	0.0	
									C	P018	H	0.0	6.0	0 0	
MI3667503	GEN	MIG000007077	MID092947928	MID092947928	09352231	10/05/1994		N	A	F003	H	0.0	440.0	0 0	
									B	D002	H	0.0	40.0	0 0	945
									C	F002	H	0.0	15.0	0.0	
									D	029L	N	0.0	450.0	0.0	
	TSD	MIG000007077		MID092947928	09471518	10/05/1994		N	A	F003	H	0.0	440.0	0.0	
									B	D002	H	0.0	40.0	0 0	
									C	F002	H	0.0	15.0	0.0	
									D	029L	N	0.0	450.0	0.0	
MI3667554	GEN	MIG000023892	MID092947928	MID092947928	09432411	10/07/1994		N	A	D002	H	0.0	35.0	0 0	
									B	F005	H	0.0	150.0	0.0	265
									C	D001	H	0.0	5 0	0.0	
									D	F002	H	0.0	75.0	0.0	
	TSD	MIG000023892		MID092947928	09471519	10/07/1994		N	A	D002	H	0.0	35.0	0 0	

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MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD	
MI3667554	TSD	MIG000023892		MID092947928	09471519	10/07/1994		N	B	F005	H	0.0	150.0	0 0	
									C	D001	H	0.0	5.0	0.0	
									D	F002	H	0.0	75.0	0.0	
MI3667585	GEN	MIT270010598	MID092947928	MID092947928	09392552	10/11/1994		N	A	F005	H	0.0	450.0	0 0	465
									B	D001	H	0.0	10.0	0.0	
									C	D003	H	0.0	5.0	0.0	
	TSD	MIT270010598		MID092947928	09412521	10/11/1994		N	A	F005	H	0.0	450.0	0 0	
									B	D001	H	0.0	10.0	0.0	
									C	D003	H	0.0	5.0	0.0	
MI3667592	GEN	MID981949480	MID092947928	MID092947928	09351158	10/12/1994		N	A	F003	H	0.0	60.0	0.0	
									B	F003	H	0.0	300.0	0.0	995
									C	F003	H	0.0	600.0	0 0	
									D	F003	H	0.0	35.0	0.0	
	TSD	MID981949480		MID092947928	09412461	10/12/1994		N	A	F003	H	0.0	60.0	0.0	
									B	F003	H	0.0	300 0	0 0	
									C	F003	H	0.0	600.0	0.0	
									D	F003	H	0.0	35.0	0 0	
MI3667593	GEN	MID981949480	MID092947928	MID092947928	09351157	10/12/1994		N	A	D037	H	0.0	85.0	0.0	
									B	D037	H	0.0	15 0	0.0	110
									C	D003	H	0.0	5 0	0.0	
									D	D003	H	0.0	5.0	0 0	
	TSD	MID981949480		MID092947928	09412529	10/12/1994		N	A	D037	H	0.0	85.0	0 0	
									B	D037	H	0.0	15.0	0.0	
									C	D003	H	0.0	5.0	0.0	
									D	D003	H	0.0	5.0	0.0	
MI3667594	GEN	MID981949480	MID092947928	MID092947928	09351156	10/12/1994		N	A	F003	H	0.0	120.0	0.0	240
									B	D009	H	0.0	20.0	0 0	
									C	D002	H	0.0	10.0	0 0	
									D	006L	N	0.0	90.0	0 0	
	TSD	MID981949480		MID092947928	09412526	10/12/1994		N	A	F003	H	0.0	120.0	0 0	
									B	D009	H	0.0	20.0	0.0	
									C	D002	H	0.0	10.0	0 0	
									D	006L	N	0.0	90.0	0 0	

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667595	GEN	MID981949480	MID092947928	MID092947928	09351155	10/12/1994		N	A	F002	H	0.0	15.0	0.0
	TSD	MID981949480		MID092947928	09412527	10/12/1994		N	A	F002	H	0.0	15.0	0.0
MI3667597	GEN	MID006016117	MID092947928	MID092947928	09311867	10/03/1994		N	A	D009	H	0.0	290.0	0.0
	TSD	MID006016117		MID092947928	09412482	10/03/1994		N	A	D009	H	0.0	290.0	0.0
MI3667599	GEN	MI0680032265	MID092947928	MID092947928	09312561	10/04/1994		N	A	D001	H	0.0	80.0	0.0
									B	D001	H	0.0	45.0	0.0
									C	D001	H	0.0	60.0	0.0
									D	D006	H	0.0	70.0	0.0
	TSD	MI0680032265		MID092947928	09412486	10/04/1994		N	A	D001	H	0.0	80.0	0.0
									B	D001	H	0.0	45.0	0.0
									C	D001	H	0.0	60.0	0.0
									D	D006	H	0.0	70.0	0.0
MI3667650	GEN	MI0680032265	MID092947928	MID092947928	09312560	10/04/1994		N	A	D002	H	0.0	470.0	0.0
	TSD	MI0680032265		MID092947928	09412485	10/04/1994		N	A	D002	H	0.0	470.0	0.0
MI3667655	GEN	MIT270013709	MID092947928	MID092947928	09331099	10/04/1994		N	A	F003	H	548.0	0.0	0.0
									B	D003	H	0.0	10.0	0.0
									C	F003	H	0.0	10.0	0.0
									D	D002	H	0.0	5.0	0.0
	TSD	MIT270013709		MID092947928	09412451	10/04/1994		N	A	F003	H	548.0	0.0	0.0
									B	D003	H	0.0	10.0	0 0
									C	F003	H	0.0	10.0	0.0
									D	D002	H	0.0	5.0	0.0
MI3667656	GEN	MIT270013709	MID092947928	MID092947928	09331100	10/04/1994		N	A	D003	H	0.0	5.0	0.0
									B	D009	H	0.0	200.0	0.0
									C	F003	H	0.0	30.0	0.0
	TSD	MIT270013709		MID092947928	09412452	10/04/1994		N	A	D003	H	0.0	5.0	0.0
									B	D009	H	0.0	200.0	0 0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667656	TSD	MIT270013709		MID092947928	09412452	10/04/1994		N	C	F003	H	0.0	30.0	0.0
MI3667658	GEN	MIG000004319	MID092947928	MID092947928	09371738	10/05/1994		N	A	F003	H	0.0	60.0	0.0
									B	D009	H	0.0	25.0	0.0
	TSD	MIG000004319		MID092947928	09412441	10/05/1994		N	A	F003	H	0.0	60.0	0.0
									B	D009	H	0.0	25.0	0.0
MI3667659	TSD	MIG000017987		MID092947928	09412492	10/06/1994		N	A	F003	H	0.0	250.0	0.0
									B	006L	N	0.0	150.0	0.0
									C	006L	N	0.0	200.0	0.0
									D	006L	N	0.0	40.0	0.0
MI3667660	TSD	MIG000017987		MID092947928	09471520	10/06/1994		N	A	D001	H	0.0	400.0	0.0
									B	F003	H	0.0	40.0	0.0
									C	D001	H	0.0	150.0	0.0
									D	D008	H	0.0	15.0	0.0
MI3667662	GEN	MID005462692	MID092947928	MID092947928	09331777	10/10/1994		N	A	D001	H	0.0	5.0	0.0
									B	D001	H	0.0	20.0	0.0
									C	D001	H	0.0	400.0	0.0
									D	D001	H	0.0	1.0	0.0
	TSD	MID005462692		MID092947928	09412517	10/10/1994		N	A	D001	H	0.0	5.0	0.0
									B	D001	H	0.0	20.0	0.0
									C	D001	H	0.0	400.0	0.0
									D	D001	H	0.0	1.0	0.0
MI3667664	GEN	MIT270010598	MID092947928	MID092947928	09392546	10/05/1994		N	A	F003	H	0.0	40.0	0.0
									B	P108	H	0.0	15.0	0.0
									C	D003	H	0.0	10.0	0.0
	TSD	MIT270010598		MID092947928	09412440	10/05/1994		N	A	F003	H	0.0	40.0	0.0
									B	P108	H	0.0	15.0	0.0
									C	D003	H	0.0	10.0	0.0
MI3667671	GEN	MIT270010598	MID092947928	MID092947928	09500482	11/30/1994		N	A	F005	H	0.0	450.0	0.0
									B	F005	H	0.0	930.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667671	GEN	MIT270010598	MID092947928	MID092947928	09500482	11/30/1994		N	C	D001	H	0.0	100.0	0.0
									D	D003	H	0.0	50.0	0.0
	TSD	MIT270010598		MID092947928	09542334	11/30/1994		N	A	F005	H	0.0	450.0	0.0
									B	F005	H	0.0	930.0	0.0
									C	D001	H	0.0	100.0	0.0
									D	D003	H	0.0	50.0	0.0
MI3667672	GEN	MIT270010598	MID092947928	MID092947928	09500445	11/01/1994		N	A	F003	H	0.0	510.0	0.0
									B	F003	H	0.0	1050.0	0.0
									C	F003	H	0.0	420.0	0 0
									D	D001	H	0.0	740.0	0.0
	TSD	MIT270010598		MID092947928	09542317	11/01/1994		N	A	F003	H	0.0	510.0	0.0
									B	F003	H	0.0	1050.0	0.0
									C	F003	H	0.0	420.0	0.0
									D	D001	H	0.0	740.0	0.0
MI3667673	GEN	MIT270010598	MID092947928	MID092947928	09500444	11/01/1994		N	A	D002	H	0.0	45.0	0.0
									B	D001	H	0.0	40.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	D001	H	0.0	70.0	0.0
	TSD	MIT270010598		MID092947928	09542318	11/01/1994		N	A	D002	H	0.0	45.0	0.0
									B	D001	H	0.0	40.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	D001	H	0.0	70.0	0.0
MI3667674	GEN	MIT270010598	MID092947928	MID092947928	09500443	11/01/1994		N	A	D006	H	0.0	280.0	0.0
									B	D008	H	0.0	95.0	0.0
									C	021L	N	0.0	40.0	0.0
	TSD	MIT270010598		MID092947928	09542304	11/01/1994		N	A	D006	H	0.0	280.0	0.0
									B	D008	H	0.0	95.0	0.0
									C	021L	N	0.0	40.0	0.0
MI3667679	GEN	MID005174339	MID092947928	MID092947928	09430990	11/02/1994		N	A	F003	H	0.0	400.0	0.0
									B	D001	H	0.0	220.0	0.0
	TSD	MID005174339		MID092947928	09542319	11/02/1994		N	A	F003	H	0.0	400.0	0.0
									B	D001	H	0.0	220.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667685	GEN	MID981530272	MID092947928	MID092947928	09462153	11/07/1994		N	A	F003	H	0.0	175.0	0.0
									B	F003	H	0.0	410.0	0.0
									C	D001	H	0.0	1100.0	0.0
									D	D001	H	0.0	950.0	0.0
	TSD	MID981530272		MID092947928	09542160	11/07/1994		N	A	F003	H	0.0	175.0	0.0
									B	F003	H	0.0	410.0	0.0
									C	D001	H	0.0	1100.0	0.0
									D	D001	H	0.0	950.0	0.0
MI3667686	GEN	MID981530272	MID092947928	MID092947928	09462020	11/07/1994		N	A	D002	H	0.0	45.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	D007	H	0.0	95.0	0.0
									D	D009	H	0.0	20.0	0.0
	TSD	MID981530272		MID092947928	09542159	11/07/1994		N	A	D002	H	0.0	45.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	D007	H	0.0	95.0	0.0
									D	D009	H	0.0	20.0	0.0
MI3667687	GEN	MID981530272	MID092947928	MID092947928	09462019	11/07/1994		N	A	D001	H	0.0	20.0	0.0
									B	D003	H	0.0	55.0	0.0
									C	D003	H	0.0	15.0	0.0
	TSD	MID981530272		MID092947928	09542161	11/07/1994		N	A	D001	H	0.0	20.0	0.0
									B	D003	H	0.0	55.0	0.0
									C	D003	H	0.0	15.0	0.0
MI3667694	GEN	MID982063281	MID092947928	MID092947928	09482511	11/21/1994		N	A	F003	H	0.0	450.0	0.0
									B	D001	H	0.0	35.0	0.0
									C	D002	H	0.0	270.0	0.0
									D	F002	H	0.0	90.0	0.0
	TSD	MID982063281		MID092947928	09542345	11/21/1994		N	A	F003	H	0.0	450.0	0.0
									B	D001	H	0.0	35.0	0.0
									C	D002	H	0.0	270.0	0 0
									D	F002	H	0.0	90.0	0.0
MI3667697	GEN	MIT270010598	MID092947928	MID092947928	09500442	11/08/1994		N	A	D004	H	0.0	270.0	0.0
									B	D022	H	0.0	200.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667697	GEN	MIT270010598	MID092947928	MID092947928	09500442	11/08/1994		N	C	D005	H	0.0	190.0	0.0
	TSD	MIT270010598		MID092947928	09542315	11/08/1994		N	A	D004	H	0.0	270.0	0.0
									B	D022	H	0.0	200.0	0.0
									C	D005	H	0.0	190.0	0.0
MI3667698	GEN	MIT270010598	MID092947928	MID092947928	09500501	11/08/1994		N	A	D002	H	0.0	410.0	0.0
									B	D009	H	0.0	25.0	0.0
									C	F003	H	0.0	140.0	0.0
									D	D001	H	0.0	120.0	0.0
	TSD	MIT270010598		MID092947928	09542314	11/08/1994		N	A	D002	H	0.0	410.0	0.0
									B	D009	H	0.0	25.0	0.0
									C	F003	H	0.0	140.0	0.0
									D	D001	H	0.0	120.0	0.0
MI3667699	GEN	MIT270010598	MID092947928	MID092947928	09500500	11/08/1994		N	A	F003	H	0.0	520.0	0.0
									B	F003	H	0.0	425.0	0.0
									C	F003	H	0.0	45.0	0.0
									D	F003	H	0.0	200.0	0.0
	TSD	MIT270010598		MID092947928	09542316	11/08/1994		N	A	F003	H	0.0	520.0	0.0
									B	F003	H	0.0	425.0	0.0
									C	F003	H	0.0	45.0	0.0
									D	F003	H	0.0	200.0	0.0
MI3667704	GEN	MIT270010598	MID092947928	MID092947928	09500495	11/15/1994		N	A	F003	H	0.0	1500.0	0.0
									B	F003	H	0.0	740.0	0.0
									C	F003	H	0.0	100.0	0.0
									D	F003	H	0.0	490.0	0.0
	TSD	MIT270010598		MID092947928	09542175	11/15/1994		N	A	F003	H	0.0	1500.0	0.0
									B	F003	H	0.0	740.0	0.0
									C	F003	H	0.0	100.0	0.0
									D	F003	H	0.0	490.0	0.0
MI3667705	GEN	MIT270010598	MID092947928	MID092947928	09500496	11/15/1994		N	A	F003	H	0.0	370.0	0.0
									B	D003	H	0.0	10.0	0.0
									C	D001	H	0.0	30.0	0.0
									D	D001	H	0.0	15.0	0.0
	TSD	MIT270010598		MID092947928	09542173	11/15/1994		N	A	F003	H	0.0	370.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667705	TSD	MIT270010598		MID092947928	09542173	11/15/1994		N	B	D003	H	0.0	10.0	0.0
									C	D001	H	0.0	30.0	0.0
									D	D001	H	0.0	15.0	0.0
MI3667706	GEN	MIT270010598	MID092947928	MID092947928	09500497	11/15/1994		N	A	D002	H	0.0	290.0	0.0
									B	D002	H	0.0	145.0	0.0
									C	D009	H	0.0	240.0	0.0
									D	D022	H	0.0	75.0	0.0
	TSD	MIT270010598		MID092947928	09542174	11/15/1994		N	A	D002	H	0.0	290.0	0.0
									B	D002	H	0.0	145.0	0.0
									C	D009	H	0.0	240.0	0.0
									D	D022	H	0.0	75.0	0.0
MI3667707	GEN	MIT270010598	MID092947928	MID092947928	09500498	11/15/1994		N	A	D006	H	0.0	80.0	0.0
									B	021L	N	0.0	20.0	0.0
	TSD	MIT270010598		MID092947928	09542176	11/15/1994		N	A	D006	H	0.0	80.0	0.0
									B	021L	N	0.0	20.0	0.0
MI3667711	GEN	MIT270010598	MID092947928	MID092947928	09500489	11/22/1994		N	A	F003	H	0.0	1000.0	0.0
									B	F003	H	0.0	400.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	F003	H	0.0	400.0	0.0
	TSD	MIT270010598		MID092947928	09542347	11/22/1994		N	A	F003	H	0.0	1000.0	0.0
									B	F003	H	0.0	400.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	F003	H	0.0	400.0	0.0
MI3667712	GEN	MIT270010598	MID092947928	MID092947928	09500490	11/22/1994		N	A	D002	H	0.0	210.0	0.0
									B	D002	H	0.0	390.0	0.0
									C	D001	H	0.0	80.0	0.0
									D	021L	N	0.0	20.0	0.0
	TSD	MIT270010598		MID092947928	09542348	11/22/1994		N	A	D002	H	0.0	210.0	0.0
									B	D002	H	0.0	390.0	0.0
									C	D001	H	0.0	80.0	0.0
									D	021L	N	0.0	20.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T 4ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667713	GEN	MIT270010598	MID092947928	MID092947928	09500491	11/22/1994		N	A	D006	H	0.0	70.0	0.0
									B	D004	H	0.0	150.0	0.0
									C	D022	H	0.0	140.0	0.0
	TSD	MIT270010598		MID092947928	09542349	11/22/1994		N	A	D006	H	0.0	70.0	0.0
									B	D004	H	0.0	150.0	0.0
									C	D022	H	0.0	140.0	0.0
MI3667718	GEN	MIT270010598	MID092947928	MID092947928	09500487	11/29/1994		N	A	F003	H	0.0	780.0	0.0
									B	F003	H	0.0	850.0	0.0
									C	F003	H	0.0	190.0	0.0
									D	F003	H	0.0	180.0	0.0
	TSD	MIT270010598		MID092947928	09542331	11/29/1994		N	A	F003	H	0.0	780.0	0.0
									B	F003	H	0.0	850.0	0.0
									C	F003	H	0.0	190.0	0.0
									D	F003	H	0.0	180.0	0.0
MI3667719	GEN	MIT270010598	MID092947928	MID092947928	09500486	11/29/1994		N	A	D002	H	0.0	410.0	0.0
									B	D011	H	0.0	190.0	0.0
									C	D004	H	0.0	110.0	0.0
									D	D001	H	0.0	40.0	0.0
	TSD	MIT270010598		MID092947928	09542329	11/29/1994		N	A	D002	H	0.0	410.0	0.0
									B	D011	H	0.0	190.0	0.0
									C	D004	H	0.0	110.0	0.0
									D	D001	H	0.0	40.0	0.0
MI3667720	GEN	MIT270010598	MID092947928	MID092947928	09500488	11/29/1994		N	A	D006	H	0.0	55.0	0.0
									B	021L	N	0.0	70.0	0.0
									C	029L	N	0.0	410.0	0.0
	TSD	MIT270010598		MID092947928	09542330	11/29/1994		N	A	D006	H	0.0	55.0	0.0
									B	021L	N	0.0	70.0	0.0
									C	029L	N	0.0	410.0	0.0
MI3667727	GEN	MIG000002008	MID092947928	MID092947928	09330576	10/06/1994		N	A	D001	H	0.0	310.0	0.0
									B	D001	H	0.0	300.0	0.0
									C	D002	H	0.0	40.0	0.0
									D	D009	H	0.0	15.0	0.0
	TSD	MIG000002008		MID092947928	09412494	10/06/1994		N	A	D001	H	0.0	310.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR : MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667727	TSD	MIG000002008		MID092947928	09412494	10/06/1994		N	B	D001	H	0.0	300.0	0.0
									C	D002	H	0.0	40.0	0.0
									D	D009	H	0.0	15.0	0.0
MI3667733	GEN	MIG000012957	MID092947928	MID092947928	09372139	10/11/1994		N	A	D009	H	0.0	250.0	0.0
									B	D009	H	0.0	175.0	0.0
									C	F003	H	0.0	500.0	0.0
									D	D009	H	0.0	10.0	0.0
	TSD	MIG000012957		MID092947928	09412523	10/11/1994		N	A	D009	H	0.0	250.0	0.0
									B	D009	H	0.0	175.0	0.0
									C	F003	H	0.0	500.0	0.0
									D	D009	H	0.0	10.0	0.0
MI3667736	TSD	MIG000021559		MID092947928	09471521	10/14/1994		N	A	F003	H	0.0	410.0	0.0
									B	D009	H	0.0	95.0	0.0
MI3667739	GEN	MIG000040288	MID092947928	MID092947928	09351235	10/11/1994		N	A	U061	H	0.0	15.0	0.0
	TSD	MIG000040288		MID092947928	09412522	10/11/1994		N	A	U061	H	0.0	15.0	0.0
MI3667740	GEN	MID005380126	MID092947928	MID092947928	09392034	10/28/1994		N	A	P042	H	0.0	2800.0	0.0
									B	117U	H	0.0	450.0	0.0
									C	D009	H	0.0	800.0	0.0
									D	D002	H	0.0	1600.0	0.0
	TSD	MID005380126		MID092947928	09582434	10/28/1994		N	A	P042	H	0.0	2800.0	0.0
									B	117U	H	0.0	450.0	0.0
									C	D009	H	0.0	800.0	0.0
									D	D002	H	0.0	1600.0	0.0
MI3667741	GEN	MID005380126	MID092947928	MID092947928	09392033	10/28/1994		N	A	D002	H	0.0	500.0	0.0
									B	D002	H	0.0	125.0	0.0
									C	020L	N	0.0	625.0	0.0
									D	029L	N	0.0	40.0	0.0
	TSD	MID005380126		MID092947928	09412776	10/28/1994		N	A	D002	H	0.0	500.0	0.0
									B	D002	H	0.0	125.0	0.0
									C	020L	N	0.0	625.0	0.0
									D	029L	N	0.0	40.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T: ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667744	GEN	MIG000040337	MID092947928	MID092947928	09390393	10/14/1994		N	A	F003	H	0.0	350.0	0.0
									B	F003	H	0.0	40.0	0.0
	TSD	MIG000040337		MID092947928	09412524	10/14/1994		N	A	F003	H	0.0	350.0	0.0
									B	F003	H	0.0	40.0	0.0
MI3667745	GEN	MID005379607	MID092947928	MID092947928	09370152	10/17/1994		N	A	D009	H	0.0	65.0	0.0
	TSD	MID005379607		MID092947928	09412472	10/17/1994		N	A	D009	H	0.0	65.0	0.0
MI3667748	GEN	MID074303082	MID092947928	MID092947928	09490919	10/21/1994		N	A	F005	H	0.0	850.0	0.0
									B	D001	H	0.0	35.0	0.0
									C	029L	N	0.0	290.0	0.0
	TSD	MID074303082		MID092947928	09412464	10/21/1994		N	A	F005	H	0.0	850.0	0.0
									B	D001	H	0.0	35.0	0.0
									C	029L	N	0.0	290.0	0.0
MI3667772	GEN	LA4800014587	ARD981908551	MID092947928	09420491	10/20/1994		N	A	D009	H	0.0	5.0	0.0
	TSD	LA4800014587		MID092947928	09450698	10/24/1994		N	A	D009	H	0.0	5.0	0.0
MI3667774	GEN	MID985580703	MID092947928	MID092947928	09390720	10/24/1994		N	A	D001	H	0.0	55.0	0.0
									B	F005	H	0.0	275.0	0.0
									C	003D	H	0.0	110.0	0.0
									D	003D	H	0.0	160.0	0.0
	TSD	MID985580703		MID092947928	09450693	10/24/1994		N	A	D001	H	0.0	55.0	0.0
									B	F005	H	0.0	275.0	0.0
									C	003D	H	0.0	110.0	0.0
									D	003D	H	0.0	160.0	0.0
MI3667775	GEN	MID980682827	MID092947928	MID092947928	09372361	10/17/1994		N	A	F003	H	0.0	600.0	0.0
									B	F003	H	0.0	100.0	0.0
									C	F003	H	0.0	80.0	0.0
									D	D002	H	0.0	50.0	0.0
	TSD	MID980682827		MID092947928	09412471	10/17/1994		N	A	F003	H	0.0	600.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION ANIFEST TRACKING SYSTEM
MANIFESTS FOR 1 MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667775	TSD	MID980682827		MID092947928	09412471	10/17/1994		N	B	F003	H	0.0	100.0	0.0
									C	F003	H	0.0	80.0	0.0
									D	D002	H	0.0	50.0	0.0
MI3667776	GEN	MID980682827	MID092947928	MID092947928	09372360	10/17/1994		N	A	D006	H	0.0	60.0	0.0
									B	D005	H	0.0	20.0	0.0
									C	D009	H	0.0	10.0	0.0
									D	D003	H	0.0	15.0	0.0
	TSD	MID980682827		MID092947928	09412470	10/17/1994		N	A	D006	H	0.0	60.0	0.0
									B	D005	H	0.0	20.0	0.0
									C	D009	H	0.0	10.0	0.0
									D	D003	H	0.0	15.0	0.0
MI3667778	TSD	MIG000011861		MID092947928	09412477	10/19/1994		N	A	F003	H	0.0	35.0	0.0
									B	F005	H	0.0	15.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	029L	N	0.0	120.0	0.0
MI3667783	GEN	MIT270010598	MID092947928	MID092947928	09392563	10/27/1994		N	A	D001	H	0.0	40.0	0.0
									B	F003	H	0.0	2550.0	0.0
									C	F003	H	0.0	125.0	0.0 275
									D	F003	H	0.0	60.0	0.0
	TSD	MIT270010598		MID092947928	09412781	10/27/1994		N	A	D001	H	0.0	40.0	0.0
									B	F003	H	0.0	2550.0	0.0
									C	F003	H	0.0	125.0	0.0
									D	F003	H	0.0	60.0	0.0
MI3667784	GEN	MIT270010598	MID092947928	MID092947928	09392562	10/27/1994		N	A	D003	H	0.0	10.0	0.0
									B	D001	H	0.0	240.0	0.0
									C	D001	H	0.0	40.0	0.0
									D	D004	H	0.0	60.0	0.0
	TSD	MIT270010598		MID092947928	09412780	10/27/1994		N	A	D003	H	0.0	10.0	0.0
									B	D001	H	0.0	240.0	0.0
									C	D001	H	0.0	40.0	0.0
									D	D004	H	0.0	60.0	0.0
MI3667785	GEN	MIT270010598	MID092947928	MID092947928	09392561	10/27/1994		N	A	D002	H	0.0	50.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667785	GEN	MIT270010598	MID092947928	MID092947928	09392561	10/27/1994		N	B	D002	H	0.0	20.0	0.0
									C	D002	H	0.0	775.0	0.0
									D	D006	H	0.0	125.0	0.0
	TSD	MIT270010598		MID092947928	09412783	10/27/1994		N	A	D002	H	0.0	50.0	0.0
									B	D002	H	0.0	20.0	0.0
									C	D002	H	0.0	775.0	0.0
									D	D006	H	0.0	125.0	0.0
MI3667786	GEN	MIT270010598	MID092947928	MID092947928	09392560	10/27/1994		N	A	D008	H	0.0	275.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	142U	H	0.0	475.0	0.0
									D	029L	N	0.0	1800.0	0.0
	TSD	MIT270010598		MID092947928	09412784	10/27/1994		N	A	D008	H	0.0	275.0	0.0
									B	D009	H	0.0	10.0	0.0
									C	142U	H	0.0	475.0	0.0
									D	029L	N	0.0	1800.0	0.0
MI3667794	GEN	MID980902563	MID092947928	MID092947928	09370819	10/19/1994		N	A	D001	H	0.0	60.0	0.0
									B	D002	H	0.0	5.0	0.0
	TSD	MID980902563		MID092947928	09412476	10/19/1994		N	A	D001	H	0.0	60.0	0.0
									B	D002	H	0.0	5.0	0.0
MI3667795	GEN	MID006012405	MID092947928	MID092947928	09370791	10/20/1994		N	A	F003	H	0.0	420.0	0.0
									B	D001	H	0.0	750.0	0.0
									C	021L	N	0.0	600.0	0.0
									D	029L	N	0.0	90.0	0.0
	TSD	MID006012405		MID092947928	09412465	10/20/1994		N	A	F003	H	0.0	420.0	0.0
									B	D001	H	0.0	750.0	0.0
									C	021L	N	0.0	600.0	0.0
									D	029L	N	0.0	90.0	0.0
MI3667800	GEN	MID069479632	MID092947928	MID092947928	09371982	10/24/1994		N	A	F003	H	0.0	940.0	0.0
	TSD	MID069479632		MID092947928	09450692	10/24/1994		N	A	F003	H	0.0	940.0	0.0
MI3667801	TSD	MIG000009290		MID092947928	09471531	10/27/1994		N	A	F003	H	0.0	300.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667801	TSD	MIG000009290		MID092947928	09471531	10/27/1994		N	B	021L	N	0.0	80.0	0.0
MI3667802	GEN	MID006012405	MID092947928	MID092947928	09390430	10/27/1994		N	A	D009	H	0.0	1.0	0.0
									B	D002	H	0.0	300.0	0.0
									C	029L	N	0.0	350.0	0.0
									D	021L	N	0.0	1050.0	0.0
	TSD	MID006012405		MID092947928	09471030	10/27/1994		N	A	D009	H	0.0	1.0	0.0
									B	D002	H	0.0	300.0	0.0
									C	029L	N	0.0	350.0	0.0
									D	021L	N	0.0	1050.0	0.0
MI3667804	GEN	MIG000033355	MID092947928	MID092947928	09490114	10/26/1994		N	A	F003	H	0.0	75.0	0.0
									B	D001	H	0.0	370.0	0.0
									C	D001	H	0.0	410.0	0.0 875
									D	D001	H	0.0	10.0	0.0
	TSD	MIG000033355		MID092947928	09412462	10/26/1994		N	A	F003	H	0.0	75.0	0.0
									B	D001	H	0.0	370.0	0.0
									C	D001	H	0.0	410.0	0.0
									D	D001	H	0.0	10.0	0.0
MI3667805	GEN	MIT270013709	MID092947928	MID092947928	09392673	10/31/1994		N	A	F003	H	434.0	0.0	0.0
									B	F003	H	0.0	40.0	0.0
									C	D003	H	2.0	0.0	0.0
									D	D003	H	0.0	10.0	0.0
	TSD	MIT270013709		MID092947928	09450700	10/31/1994		N	A	F003	H	434.0	0.0	0.0
									B	F003	H	0.0	40.0	0.0
									C	D003	H	2.0	0.0	0.0
									D	D003	H	0.0	10.0	0.0
MI3667806	GEN	MIT270013709	MID092947928	MID092947928	09392672	10/31/1994		N	A	D009	H	0.0	390.0	0 0
									B	D001	H	30.0	0.0	0.0
	TSD	MIT270013709		MID092947928	09450701	10/31/1994		N	A	D009	H	0.0	390.0	0.0
									B	D001	H	30.0	0.0	0.0
MI3667808	GEN	MID121994842	MID092947928	MID092947928	09510981	10/27/1994		N	A	F003	H	0.0	110.0	0.0
									B	D009	H	0.0	10.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667808	TSD	MID121994842		MID092947928	09471532	10/27/1994		N	A	F003	H	0.0	110.0	0.0
									B	D009	H	0.0	10.0	0.0
MI3667809	GEN	MIG000008982	MID092947928	MID092947928	09500294	11/03/1994		N	A	F005	H	0.0	100.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	D001	H	0.0	10.0	0.0
									D	D005	H	0.0	45.0	0.0
	TSD	MIG000008982		MID092947928	09542322	11/03/1994		N	A	F005	H	0.0	100.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	D001	H	0.0	10.0	0.0
									D	D005	H	0.0	45.0	0.0
MI3667810	GEN	MIG000008982	MID092947928	MID092947928	09462296	11/03/1994		N	A	D003	H	0.0	10.0	0.0
									B	D019	H	0.0	25.0	0.0
									C	D004	H	0.0	210.0	0.0
									D	D009	H	0.0	5.0	0.0
	TSD	MIG000008982		MID092947928	09542323	11/03/1994		N	A	D003	H	0.0	10.0	0.0
									B	D019	H	0.0	25.0	0.0
									C	D004	H	0.0	210.0	0.0
									D	D009	H	0.0	5.0	0.0
MI3667815	GEN	MIT270010598	MID092947928	MID092947928	09560693	12/06/1994		N	A	F003	H	0.0	150.0	0.0
									B	F003	H	0.0	175.0	0.0
									C	F003	H	0.0	350.0	0.0
									D	D007	H	0.0	175.0	0.0
	TSD	MIT270010598		MID092947928	09601616	12/06/1994		N	A	F003	H	0.0	150.0	0.0
									B	F003	H	0.0	175.0	0.0
									C	F003	H	0.0	350.0	0.0
									D	D007	H	0.0	175.0	0.0
MI3667816	GEN	MIT270010598	MID092947928	MID092947928	09560700	12/06/1994		N	A	D002	H	0.0	150.0	0.0
									B	D002	H	0.0	175.0	0.0
									C	D001	H	0.0	50.0	0.0
									D	D006	H	0.0	120.0	0.0
	TSD	MIT270010598		MID092947928	09601615	12/06/1994		N	A	D002	H	0.0	150.0	0.0
									B	D002	H	0.0	175.0	0.0
									C	D001	H	0.0	50.0	0.0
									D	D006	H	0.0	120.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667822	GEN	MID005174339	MID092947928	MID092947928	09510557	12/07/1994		N	A	F003	H	0.0	450.0	0.0
									B	D001	H	0.0	70.0	0.0
									C	D001	H	0.0	340.0	0.0
	TSD	MID005174339		MID092947928	09601610	12/07/1994		N	A	F003	H	0.0	450.0	0.0
									B	D001	H	0.0	70.0	0.0
									C	D001	H	0.0	340.0	0.0
MI3667825	GEN	MID060198215	MID092947928	MID092947928	09481896	10/27/1994		N	A	D001	H	0.0	5.0	0.0
									B	F002	H	0.0	60.0	0.0
									C	F002	H	0.0	75.0	0.0
	TSD	MID060198215		MID092947928	09522160	10/27/1994		N.	A	D001	H	0.0	5.0	0.0
									B	F002	H	0.0	60.0	0.0
									C	F002	H	0.0	75.0	0.0
MI3667827	GEN	MID049243694	MID092947928	MID092947928	09391165	10/28/1994		N	A	F003	H	0.0	20.0	0.0
									B	D002	H	0.0	30.0	0.0
	TSD	MID049243694		MID092947928	09412778	10/28/1994		N	A	F003	H	0.0	20.0	0.0
									B	D002	H	0.0	30.0	0.0
MI3667828	GEN	MID985650969	MID092947928	MID092947928	09392081	10/31/1994		N	A	D008	H	0.0	1500.0	0.0
									B	D001	H	0.0	400.0	0.0
									C	F005	H	0.0	400.0	0.0
	TSD	MID985650969		MID092947928	09450703	10/31/1994		N	A	D008	H	0.0	1500.0	0.0
									B	D001	H	0.0	400.0	0.0
									C	F005	H	0.0	400.0	0.0
MI3667829	GEN	MID980682827	MID092947928	MID092947928	09431369	11/04/1994		N	A	D002	H	0.0	140.0	0.0
									B	D002	H	0.0	25.0	0.0
									C	D009	H	0.0	15.0	0.0
									D	D019	H	0.0	40.0	0.0
	TSD	MID980682827		MID092947928	09542164	11/04/1994		N	A	D002	H	0.0	140.0	0.0
									B	D002	H	0.0	25.0	0.0
									C	D009	H	0.0	15.0	0.0
									D	D019	H	0.0	40.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667830	GEN	MID980682827	MID092947928	MID092947928	09431368	11/04/1994		N	A	D001	H	0.0	75.0	0.0
									B	F003	H	0.0	80.0	0.0
									C	F003	H	0.0	120.0	0.0
									D	029L	N	0.0	110.0	0.0
	TSD	MID980682827		MID092947928	09542166	11/04/1994		N	A	D001	H	0.0	75.0	0.0
									B	F003	H	0.0	80.0	0.0
									C	F003	H	0.0	120.0	0.0
									D	029L	N	0.0	110.0	0.0
MI3667831	GEN	MID980682827	MID092947928	MID092947928	09431367	11/04/1994		N	A	D002	H	0.0	80.0	0.0
									B	D007	H	0.0	90.0	0.0
									C	D007	H	0.0	120.0	0.0
									D	D011	H	0.0	320.0	0.0
	TSD	MID980682827		MID092947928	09542165	11/04/1994		N	A	D002	H	0.0	80.0	0.0
									B	D007	H	0.0	90.0	0.0
									C	D007	H	0.0	120.0	0.0
									D	D011	H	0.0	320.0	0.0
MI3667833	GEN	MIG000033355	MID092947928	MID092947928	09490112	11/09/1994		N	A	F003	H	0.0	80.0	0.0
									B	D019	H	0.0	20.0	0.0
									C	D002	H	0.0	25.0	0.0
									D	D001	H	0.0	10.0	0.0
	TSD	MIG000033355		MID092947928	09542145	11/09/1994		N	A	F003	H	0.0	80.0	0.0
									B	D019	H	0.0	20.0	0.0
									C	D002	H	0.0	25.0	0.0
									D	D001	H	0.0	10.0	0.0
MI3667834	GEN	MIG000033355	MID092947928	MID092947928	09490113	11/09/1994		N	A	D003	H	0.0	10.0	0.0
									B	D003	H	0.0	10.0	0.0
	TSD	MIG000033355		MID092947928	09542144	11/09/1994		N	A	D003	H	0.0	10.0	0.0
									B	D003	H	0.0	10.0	0.0
MI3667841	GEN	MID075444281	MID092947928	MID092947928	09560935	12/20/1994		N	A	029L	N	0.0	150.0	0.0
									B	D009	H	0.0	60.0	0.0
									C	F003	H	0.0	400.0	0.0

MEN01213

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667841	TSD	MID075444281		MID092947928	09601522	12/20/1994		N	A	029L	N	0.0	150 0	0 0
									B	D009	H	0.0	60.0	0.0
									C	F003	H	0.0	400.0	0 0
MI3667843	GEN	MID985623941	MID092947928	MID092947928	09430668	11/01/1994		N	A	D001	H	0.0	350.0	0 0
									B	D001	H	0.0	400.0	0.0
									C	D009	H	0.0	5.0	0 0
									D	D001	H	0.0	85.0	0 0
	TSD	MID985623941		MID092947928	09542305	11/01/1994		N	A	D001	H	0.0	350.0	0 0
									B	D001	H	0.0	400.0	0 0
									C	D009	H	0.0	5.0	0 0
									D	D001	H	0.0	85.0	0 0
MI3667845	TSD	MIG000006385		MID092947928	09542320	11/03/1994		N	A	D002	H	0.0	480.0	0 0
									B	021L	N	0.0	950.0	0 0
									C	021L	N	0.0	75.0	0 0
MI3667848	GEN	MID134494616	MID092947928	MID092947928	09480495	11/17/1994		N	A	F003	H	0.0	2050.0	0.0
									B	D001	H	0.0	40.0	0 0
									C	D022	H	0.0	80 0	0.0
									D	D001	H	0.0	30.0	0 0
	TSD	MID134494616		MID092947928	09542310	11/17/1994		N	A	F003	H	0.0	2050.0	0 0
									B	D001	H	0.0	40.0	0.0
									C	D022	H	0.0	80.0	0.0
									D	D001	H	0.0	30.0	0.0
MI3667849	GEN	MID134494616	MID092947928	MID092947928	09480491	11/17/1994		N	A	F003	H	0.0	400.0	0 0
	TSD	MID134494616		MID092947928	09542311	11/17/1994		N	A	F003	H	0.0	400.0	0 0
MI3667850	GEN	MID134494616	MID092947928	MID092947928	09480494	11/17/1994		N	A	D001	H	0.0	800.0	0.0
	TSD	MID134494616		MID092947928	09542308	11/17/1994		N	A	D001	H	0.0	800.0	0 0
MI3667851	GEN	MID006013346	MID092947928	MID092947928	09532592	11/17/1994		N	A	D009	H	0.0	25.0	0.0
									B	D002	H	0.0	45.0	0 0

MEN01214

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T 1ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667851	GEN	MID006013346	MID092947928	MID092947928	09532592	11/17/1994		N	C	D002	H	0.0	45.0	0.0
	TSD	MID006013346		MID092947928	09542313	11/17/1994		N	A	D009	H	0.0	25.0	0.0
									B	D002	H	0.0	45.0	0.0
									C	D002	H	0.0	45.0	0.0
MI3667852	GEN	MID006013346	MID092947928	MID092947928	09532617	11/17/1994		N	A	F003	H	0.0	1100.0	0.0
									B	F005	H	0.0	70.0	0.0
									C	D001	H	0.0	25.0	0.0
									D	D003	H	0.0	10.0	0.0
	TSD	MID006013346		MID092947928	09542312	11/17/1994		N	A	F003	H	0.0	1100.0	0.0
									B	F005	H	0.0	70.0	0.0
									C	D001	H	0.0	25.0	0.0
									D	D003	H	0.0	10.0	0.0
MI3667857	GEN	MIG000007107	MID092947928	MID092947928	09421077	11/07/1994		N	A	D009	H	0.0	10.0	0.0
	TSD	MIG000007107		MID092947928	09542163	11/07/1994		N	A	D009	H	0.0	10.0	0.0
MI3667858	TSD	MIG000028282		MID092947928	09542150	11/10/1994		N	A	F003	H	0.0	20.0	0.0
									B	D001	H	0.0	1.0	0.0
MI3667859	GEN	MID980902563	MID092947928	MID092947928	09460907	11/16/1994		N	A	F003	H	0.0	400.0	0.0
									B	D002	H	0.0	50.0	0.0
									C	D009	H	0.0	30.0	0.0
									D	D005	H	0.0	25.0	0.0
	TSD	MID980902563		MID092947928	09542171	11/16/1994		N	A	F003	H	0.0	400.0	0.0
									B	D002	H	0.0	50.0	0.0
									C	D009	H	0.0	30.0	0.0
									D	D005	H	0.0	25.0	0.0
MI3667861	GEN	MID078410842	MID092947928	MID092947928	09462524	11/10/1994		N	A	D007	H	0.0	15.0	0.0
									B	D009	H	0.0	25.0	0.0
									C	F003	H	0.0	30.0	0.0
									D	D001	H	0.0	10.0	0.0
	TSD	MID078410842		MID092947928	09542151	11/10/1994		N	A	D007	H	0.0	15.0	0.0
									B	D009	H	0.0	25.0	0.0

MEN01215

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667861	TSD	MID078410842		MID092947928	09542151	11/10/1994		N	C	F003	H	0.0	30.0	0.0
									D	D001	H	0.0	10.0	0.0
MI3667863	GEN	MID980499735	MID092947928	MID092947928	09532616	11/29/1994		N	A	D002	H	0.0	180.0	0.0
									B	D002	H	0.0	30.0	0.0
									C	D007	H	0.0	30.0	0.0
									D	D009	H	0.0	5.0	0.0
	TSD	MID980499735		MID092947928	09631527	11/29/1994		N	A	D002	H	0.0	180.0	0.0
									B	D002	H	0.0	30.0	0 0
									C	D007	H	0.0	30.0	0.0
									D	D009	H	0.0	5.0	0.0
MI3667864	GEN	MID980499735	MID092947928	MID092947928	09532615	11/29/1994		N	A	F005	H	0.0	45.0	0.0
									B	F005	H	0.0	35.0	0.0
	TSD	MID980499735		MID092947928	09580501	11/29/1994		N	A	F005	H	0.0	45.0	0.0
									B	F005	H	0.0	35.0	0.0
MI3667865	GEN	MID982063281	MID092947928	MID092947928	09562304	12/19/1994		N	A	F003	H	0.0	160.0	0.0
									B	F002	H	0.0	250.0	0 0
									C	D002	H	0.0	560.0	0.0
									D	D002	H	0.0	60.0	0.0
	TSD	MID982063281		MID092947928	09601583	12/19/1994		N	A	F003	H	0.0	160.0	0.0
									B	F002	H	0.0	250.0	0.0
									C	D002	H	0.0	560.0	0.0
									D	D002	H	0.0	60.0	0.0
MI3667868	TSD	MID075444281		MID092947928	09601525	12/30/1994		N	A	029L	N	0.0	750.0	0.0
									B	F003	H	0.0	350.0	0 0
									C	D001	H	0.0	75.0	0.0
MI3667877	GEN	MIT270010598	MID092947928	MID092947928	09560695	12/13/1994		N	A	D002	H	0.0	150.0	0.0
									B	D001	H	0.0	90.0	0 0
									C	D022	H	0.0	190.0	0.0
									D	D008	H	0.0	175.0	0.0
	TSD	MIT270010598		MID092947928	09601596	12/13/1994		N	A	D002	H	0.0	150.0	0.0
									B	D001	H	0.0	90.0	0.0

MEN01216

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667877	TSD	MIT270010598		MID092947928	09601596	12/13/1994		N	C	D022	H	0.0	190.0	0.0
									D	D008	H	0.0	175.0	0.0
MI3667878	GEN	MIT270010598	MID092947928	MID092947928	09560694	12/13/1994		N	A	F003	H	0.0	410.0	0.0
									B	F003	H	0.0	400.0	0.0
									C	F003	H	0.0	440.0	0.0
									D	F003	H	0.0	270.0	0.0
	TSD	MIT270010598		MID092947928	09601598	12/13/1994		N	A	F003	H	0.0	410.0	0.0
									B	F003	H	0.0	400.0	0.0
									C	F003	H	0.0	440.0	0.0
									D	F003	H	0.0	270.0	0.0
MI3667879	GEN	MIT270010598	MID092947928	MID092947928	09560696	12/13/1994		N	A	D006	H	0.0	45.0	0.0
									B	029L	N	0.0	170.0	0.0
									C	029L	N	0.0	160.0	0.0
									D	029L	N	0.0	140.0	0.0
	TSD	MIT270010598		MID092947928	09601597	12/13/1994		N	A	D006	H	0.0	45.0	0.0
									B	029L	N	0.0	170.0	0.0
									C	029L	N	0.0	160.0	0.0
									D	029L	N	0.0	140.0	0.0
MI3667884	GEN	MIT270010598	MID092947928	MID092947928	09560697	12/20/1994		N	A	F003	H	0.0	520.0	0.0
									B	F003	H	0.0	410.0	0.0
									C	F003	H	0.0	315.0	0.0
									D	D001	H	0.0	90.0	0.0
	TSD	MIT270010598		MID092947928	09601523	12/20/1994		N	A	F003	H	0.0	520.0	0.0
									B	F003	H	0.0	410.0	0.0
									C	F003	H	0.0	315.0	0.0
									D	D001	H	0.0	90.0	0.0
MI3667885	GEN	MIT270010598	MID092947928	MID092947928	09560698	12/20/1994		N	A	D002	H	0.0	140.0	0.0
									B	D002	H	0.0	220.0	0.0
									C	D022	H	0.0	90.0	0.0
									D	D001	H	0.0	40.0	0.0
	TSD	MIT270010598		MID092947928	09601520	12/20/1994		N	A	D002	H	0.0	140.0	0.0
									B	D002	H	0.0	220.0	0.0
									C	D022	H	0.0	90.0	0.0
									D	D001	H	0.0	40.0	0.0

MEN01217

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667886	GEN	MIT270010598	MID092947928	MID092947928	09560699	12/20/1994		N	A	D006	H	0.0	370.0	0.0
									B	021L	N	0.0	650.0	0.0
									C	029L	N	0.0	140.0	0.0
	TSD	MIT270010598		MID092947928	09601521	12/20/1994		N	A	D006	H	0.0	370.0	0.0
									B	021L	N	0.0	650.0	0.0
									C	029L	N	0.0	140.0	0.0
MI3667893	GEN	MID982603805	MID092947928	MID092947928	09481925	11/10/1994		N	A	F005	H	0.0	300.0	0.0
	TSD	MID982603805		MID092947928	09542149	11/10/1994		N	A	F005	H	0.0	300.0	0.0
MI3667895	GEN	MI0000789420	MID092947928	MID092947928	09480217	11/11/1994		N	A	F003	H	0.0	240.0	0.0
	TSD	MI0000789420		MID092947928	09542153	11/11/1994		N	A	F003	H	0.0	240.0	0.0
MI3667896	GEN	MID005358783	MID092947928	MID092947928	09510446	11/14/1994		N	A	D001	H	0.0	15.0	0 0
									B	D001	H	0.0	25.0	0.0
									C	D001	H	0.0	15.0	0 0
									D	D009	H	0.0	5.0	0 0
	TSD	MID005358783		MID092947928	09542157	11/14/1994		N	A	D001	H	0.0	15.0	0.0
									B	D001	H	0.0	25.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D009	H	0.0	5.0	0 0
MI3667897	TSD	MID041807777		MID092947928	09542155	11/14/1994		N	A	F003	H	0.0	1200.0	0.0
									B	D009	H	0.0	80.0	0.0
MI3667898	GEN	MID981778806	MID092947928	MID092947928	09461330	11/15/1994		N	A	F002	H	0.0	950.0	0 0
									B	F002	H	0.0	150.0	0.0
									C	F002	H	0.0	40.0	0.0
									D	D001	H	0.0	65.0	0 0
	TSD	MID981778806		MID092947928	09542168	11/15/1994		N	A	F002	H	0.0	950.0	0.0
									B	F002	H	0.0	150.0	0.0
									C	F002	H	0.0	40.0	0.0
									D	D001	H	0.0	65.0	0.0

MEN01218

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667899	GEN	MID981778806	MID092947928	MID092947928	09461331	11/15/1994		N	A	D002	H	0.0	240.0	0.0
									B	D002	H	0.0	60.0	0.0
									C	D002	H	0.0	150.0	0.0
									D	D002	H	0.0	25.0	0.0
	TSD	MID981778806		MID092947928	09542167	11/15/1994		N	A	D002	H	0.0	240.0	0.0
									B	D002	H	0.0	60.0	0.0
									C	D002	H	0.0	150.0	0.0
									D	D002	H	0.0	25.0	0.0
MI3667900	GEN	MID981778806	MID092947928	MID092947928	09461332	11/15/1994		N	A	D001	H	0.0	5.0	0.0
	TSD	MID981778806		MID092947928	09542169	11/15/1994		N	A	D001	H	0.0	5.0	0.0
MI3667905	GEN	MIT270010598	MID092947928	MID092947928	09500499	11/15/1994		N	A	P104	H	0.0	65.0	0.0
	TSD	MIT270010598		MID092947928	09542177	11/15/1994		N	A	P104	H	0.0	65.0	0.0
MI3667906	GEN	MIT270010598	MID092947928	MID092947928	09500492	11/15/1994		N	A	D002	H	0.0	2250.0	0.0
									B	D002	H	0.0	160.0	0.0
									C	D002	H	0.0	15.0	0.0
									D	D009	H	0.0	10.0	0.0
	TSD	MIT270010598		MID092947928	09542178	11/15/1994		N	A	D002	H	0.0	2250.0	0.0
									B	D002	H	0.0	160.0	0.0
									C	D002	H	0.0	15.0	0 0
									D	D009	H	0.0	10.0	0.0
MI3667907	GEN	MIT270010598	MID092947928	MID092947928	09500493	11/15/1994		N	A	D001	H	0.0	275.0	0 0
									B	F003	H	0.0	300.0	0.0
									C	F003	H	0.0	480.0	0.0
									D	D001	H	0.0	1100.0	0 0
	TSD	MIT270010598		MID092947928	09542179	11/15/1994		N	A	D001	H	0.0	275.0	0.0
									B	F003	H	0.0	300.0	0.0
									C	F003	H	0.0	480.0	0.0
									D	D001	H	0.0	1100.0	0.0

MEN01219

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667908	GEN	MIT270010598	MID092947928	MID092947928	09500494	11/15/1994		N	A	D001	H	0.0	5.0	0.0
									B	P087	H	0.0	15.0	0.0
									C	D008	H	0.0	95.0	0.0
	TSD	MIT270010598		MID092947928	09542180	11/15/1994		N	A	D001	H	0.0	5.0	0.0
									B	P087	H	0.0	15.0	0.0
									C	D008	H	0.0	95.0	0.0
MI3667913	GEN	MIG000004229	MID092947928	MID092947928	09500263	11/16/1994		N	A	F003	H	0.0	70.0	0.0
									B	D001	H	0.0	50.0	0.0
									C	D002	H	0.0	20.0	0.0
									D	029L	N	0.0	95.0	0.0
	TSD	MIG000004229		MID092947928	09542158	11/16/1994		N	A	F003	H	0.0	70.0	0.0
									B	D001	H	0.0	50.0	0.0
									C	D002	H	0.0	20.0	0.0
									D	029L	N	0.0	95.0	0.0
MI3667914	GEN	MID985643774	MID092947928	MID092947928	09570415	11/17/1994		N	A	D005	H	0.0	200.0	0.0
									B	F003	H	0.0	35.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	D001	H	0.0	15.0	0.0
	TSD	MID985643774		MID092947928	09582187	11/17/1994		N	A	D005	H	0.0	200.0	0.0
									B	F003	H	0.0	35.0	0.0
									C	D002	H	0.0	10.0	0.0
									D	D001	H	0.0	15.0	0.0
MI3667917	GEN	MID980683775	MID092947928	MID092947928	09610748	11/23/1994		N	A	F003	H	0.0	145.0	0.0
									B	D001	H	0.0	170.0	0.0
									C	D001	H	0.0	190.0	0.0
									D	D001	H	0.0	20.0	0.0
	TSD	MID980683775		MID092947928	09542352	11/23/1994		N	A	F003	H	0.0	145.0	0.0
									B	D001	H	0.0	170.0	0.0
									C	D001	H	0.0	190.0	0.0
									D	D001	H	0.0	20.0	0.0
MI3667918	GEN	MID980683775	MID092947928	MID092947928	09610749	11/23/1994		N	A	D001	H	0.0	10.0	0.0
									B	D001	H	0.0	125.0	0.0
									C	D001	H	0.0	50.0	0.0
									D	D001	H	0.0	160.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667918	TSD	MID980683775		MID092947928	09542351	11/23/1994		N	A	D001	H	0.0	10.0	0.0
									B	D001	H	0.0	125.0	0.0
									C	D001	H	0.0	50.0	0.0
									D	D001	H	0.0	160.0	0.0
MI3667919	GEN	MID980683775	MID092947928	MID092947928	09610747	11/23/1994		N	A	D002	H	0.0	120.0	0.0
									B	F002	H	0.0	180.0	0.0
									C	021L	N	0.0	210.0	0.0
	TSD	MID980683775		MID092947928	09542350	11/23/1994		N	A	D002	H	0.0	120.0	0.0
									B	F002	H	0.0	180.0	0.0
									C	021L	N	0.0	210.0	0.0
MI3667922	GEN	MIG000040632	MID092947928	MID092947928	09670388	11/11/1994		N	A	D001	H	0.0	440.0	0.0
	TSD	MIG000040632		MID092947928	09542152	11/11/1994		N	A	D001	H	0.0	440.0	0.0
MI3667923	GEN	MIG000040633	MID092947928	MID092947928	09461515	11/14/1994		N	A	F003	H	0.0	25.0	0.0
									B	F002	H	0.0	170.0	0.0
									C	021L	N	0.0	10.0	0.0
	TSD	MIG000040633		MID092947928	09542154	11/14/1994		N	A	F003	H	0.0	25.0	0.0
									B	F002	H	0.0	170.0	0.0
									C	021L	N	0.0	10.0	0.0
MI3667924	GEN	MIT270011232	MID092947928	MID092947928	09510767	11/21/1994		N	A	D009	H	0.0	9.0	0.0
									B	D001	H	0.0	50.0	0.0
									C	F003	H	0.0	150.0	0.0
									D	F003	H	0.0	74.0	0.0
	TSD	MIT270011232		MID092947928	09542342	11/21/1994		N	A	D009	H	0.0	9.0	0.0
									B	D001	H	0.0	50.0	0.0
									C	F003	H	0.0	150.0	0.0
									D	F003	H	0.0	74.0	0.0
MI3667925	GEN	MIT270011232	MID092947928	MID092947928	09510766	11/21/1994		N	A	D002	H	0.0	101.0	0.0
									B	F002	H	0.0	37.0	0.0
									C	D005	H	0.0	50.0	0.0
									D	D001	H	0.0	14.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667925	TSD	MIT270011232		MID092947928	09542343	11/21/1994		N	A	D002	H	0.0	101.0	0.0
									B	F002	H	0.0	37.0	0.0
									C	D005	H	0.0	50.0	0.0
									D	D001	H	0.0	14.0	0.0
MI3667926	GEN	MIT270011232	MID092947928	MID092947928	09510765	11/21/1994		N	A	D007	H	0.0	3.0	0.0
									B	F003	H	0.0	385.0	0.0
									C	D002	H	0.0	15.0	0.0
									D	P087	H	0.0	1.0	0.0
	TSD	MIT270011232		MID092947928	09542344	11/21/1994		N	A	D007	H	0.0	3.0	0.0
									B	F003	H	0.0	385.0	0.0
									C	D002	H	0.0	15.0	0.0
									D	P087	H	0.0	1.0	0.0
MI3667932	GEN	MID072576556	MID092947928	MID092947928	09462503	11/18/1994		N	A	D006	H	0.0	500.0	0.0
									B	F003	H	0.0	300.0	0.0
	TSD	MID072576556		MID092947928	09542307	11/18/1994		N	A	D006	H	0.0	500.0	0 0
									B	F003	H	0.0	300.0	0.0
MI3667933	GEN	MID980682827	MID092947928	MID092947928	09482621	11/18/1994		N	A	F003	H	0.0	40.0	0.0
									B	F005	H	0.0	90.0	0.0
									C	F003	H	0.0	30.0	0.0
									D	D002	H	0.0	100.0	0.0
	TSD	MID980682827		MID092947928	09542355	11/18/1994		N	A	F003	H	0.0	40.0	0.0
									B	F005	H	0.0	90.0	0.0
									C	F003	H	0.0	30.0	0.0
									D	D002	H	0.0	100.0	0.0
MI3667934	GEN	MID074303082	MID092947928	MID092947928	09490907	11/23/1994		N	A	F005	H	0.0	800.0	0.0
	TSD	MID074303082		MID092947928	09542353	11/23/1994		N	A	F005	H	0.0	800.0	0.0
MI3667935	GEN	MIG000008982	MID092947928	MID092947928	09462298	11/18/1994		N	A	D002	H	0.0	15.0	0.0
MI3667937	GEN	MI0680032265	MID092947928	MID092947928	09482093	11/28/1994		N	A	D006	H	0.0	15.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667937	GEN	MIO680032265	MID092947928	MID092947928	09482093	11/28/1994		N	B	D001	H	0.0	800.0	0.0
									C	021L	N	0.0	90.0	0.0
	TSD	MIO680032265		MID092947928	09542325	11/28/1994		N	A	D006	H	0.0	15.0	0.0
									B	D001	H	0.0	800.0	0.0
									C	021L	N	0.0	90.0	0.0
MI3667943	GEN	MIO000052852	MID092947928	MID092947928	09480507	12/02/1994		N	A	F003	N	0.0	130.0	0.0
									B	F003	N	0.0	130.0	0.0
									C	F002	N	0.0	25.0	0.0
									D	D001	N	0.0	10.0	0.0
	TSD	MIO000052852		MID092947928	09601499	12/02/1994		N	A	F003	H	0.0	130.0	0.0
									B	F003	H	0.0	130.0	0.0
									C	F002	H	0.0	25.0	0.0
									D	D001	H	0.0	10.0	0.0
MI3667944	GEN	MIO000052852	MID092947928	MID092947928	09532599	12/02/1994		N	A	D002	N	0.0	80.0	0.0
									B	D002	N	0.0	15.0	0.0
									C	D009	N	0.0	5.0	0.0
									D	D005	N	0.0	30.0	0.0
	TSD	MIO000052852		MID092947928	09601498	12/02/1994		N	A	D002	H	0.0	80.0	0.0
									B	D002	H	0.0	15.0	0.0
									C	D009	H	0.0	5.0	0.0
									D	D005	H	0.0	30.0	0.0
MI3667946	GEN	MID981778806	MID092947928	MID092947928	09482367	11/28/1994		N	A	F005	H	0.0	20.0	0.0
									B	D008	H	0.0	70.0	0.0
									C	D008	H	0.0	15.0	0.0
									D	F005	H	0.0	10.0	0.0
	TSD	MID981778806		MID092947928	09542324	11/28/1994		N	A	F005	H	0.0	20.0	0.0
									B	D008	H	0.0	70.0	0.0
									C	D008	H	0.0	15.0	0.0
									D	F005	H	0.0	10.0	0.0
MI3667948	GEN	MID006015911	MID092947928	MID092947928	09480333	12/01/1994		N	A	D002	H	0.0	80.0	0.0
	TSD	MID006015911		MID092947928	09601501	12/01/1994		N	A	D002	H	0.0	80.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667949	GEN	MID985612027	MID092947928	MID092947928	09480319	12/02/1994		N	A	D001	H	0.0	5.0	0.0
									B	F002	H	0.0	5.0	0.0
	TSD	MID985612027		MID092947928	09601621	12/02/1994		N	A	D001	H	0.0	5.0	0.0
									B	F002	H	0.0	5.0	0.0
MI3667951	GEN	MID138186218	MID092947928	MID092947928	09480552	12/02/1994		N	A	D009	H	0.0	30.0	0.0
	TSD	MID138186218		MID092947928	09601500	12/02/1994		N	A	D009	H	0.0	30.0	0.0
MI3667952	GEN	MID980682827	MID092947928	MID092947928	09530699	12/08/1994		N	A	D002	H	0.0	1200.0	0.0
									B	D002	H	0.0	2000.0	0.0
									C	D002	H	0.0	120.0	0.0
									D	D009	H	0.0	1000.0	0.0
	TSD	MID980682827		MID092947928	09601603	12/08/1994		N	A	D002	H	0.0	1200.0	0.0
									B	D002	H	0.0	2000.0	0.0
									C	D002	H	0.0	120.0	0.0
									D	D009	H	0.0	1000.0	0.0
MI3667953	GEN	MID037744919	MID092947928	MID092947928	09462415	11/22/1994		N	A	F003	H	0.0	60.0	0.0
									B	F002	H	0.0	40.0	0.0
									C	D009	H	0.0	5.0	0.0
									D	D002	H	0.0	40.0	0.0
	TSD	MID037744919		MID092947928	09542346	11/22/1994		N	A	F003	H	0.0	60.0	0.0
									B	F002	H	0.0	40.0	0.0
									C	D009	H	0.0	5.0	0.0
									D	D002	H	0.0	40.0	0.0
MI3667954	GEN	MIT270010325	MID092947928	MID092947928	09591879	12/05/1994		N	A	D001	H	0.0	440.0	0.0
									B	F003	H	0.0	130.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	D003	H	0.0	40.0	0.0
	TSD	MIT270010325		MID092947928	09601617	12/05/1994		N	A	D001	H	0.0	440.0	0.0
									B	F003	H	0.0	130.0	0.0
									C	F003	H	0.0	200.0	0.0
									D	D003	H	0.0	40.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667955	GEN	MIT270013709	MID092947928	MID092947928	09570029	12/21/1994		N	A	F003	H	65.0	0.0	0.0
									B	F003	H	3.0	0.0	0.0
									C	D002	H	2.0	0.0	0.0
									D	D003	H	0.0	150.0	0.0
	TSD	MIT270013709		MID092947928	09601519	12/21/1994		N	A	F003	H	65.0	0.0	0.0
									B	F003	H	3.0	0.0	0.0
									C	D002	H	2.0	0.0	0.0
									D	D003	H	0.0	150.0	0.0
MI3667956	GEN	MIT270013709	MID092947928	MID092947928	09570031	12/21/1994		N	A	D004	H	0.0	5.0	0.0
									B	D010	H	2.0	0.0	0.0
									C	D001	H	1.0	0.0	0.0
									D	D001	H	0.0	4.0	0.0
	TSD	MIT270013709		MID092947928	09601518	12/21/1994		N	A	D004	H	0.0	5.0	0.0
									B	D010	H	2.0	0.0	0.0
									C	D001	H	1.0	0.0	0.0
									D	D001	H	0.0	4.0	0.0
MI3667957	GEN	MIT270013709	MID092947928	MID092947928	09570030	12/21/1994		N	A	D009	H	0.0	1.0	0.0
	TSD	MIT270013709		MID092947928	09601517	12/21/1994		N	A	D009	H	0.0	1.0	0.0
MI3667963	GEN	MID985661537	MID092947928	MID092947928	09660298	12/06/1994		N	A	F003	H	0.0	200.0	0.0
	TSD	MID985661537		MID092947928	09601611	12/06/1994		N	A	F003	H	0.0	200.0	0.0
MI3667964	GEN	MIG000040747	MID092947928	MID092947928	09510889	12/06/1994		N	A	D002	H	0.0	300.0	0.0
	TSD	MIG000040747		MID092947928	09601612	12/06/1994		N	A	D002	H	0.0	300.0	0.0
MI3667965	GEN	MIT270013709	MID092947928	MID092947928	09481138	11/30/1994		N	A	D003	H	0.0	5.0	0.0
									B	020L	N	55.0	0.0	0.0
	TSD	MIT270013709		MID092947928	09542339	11/30/1994		N	A	D003	H	0.0	5.0	0.0
									B	020L	N	55.0	0.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667968	GEN	OHD051623734	MID092947928	MID092947928	09590599	12/29/1994		N	A	F003	H	0.0	600.0	0.0
									B	F003	H	0.0	110.0	0.0
									C	D001	H	0.0	55.0	0.0
									D	D001	H	0.0	30.0	0.0
	TSD	OHD051623734		MID092947928	09601530	12/29/1994		N	A	F003	H	0.0	600.0	0.0
									B	F003	H	0.0	110.0	0.0
									C	D001	H	0.0	55.0	0.0
									D	D001	H	0.0	30.0	0.0
MI3667969	GEN	MIT270013709	MID092947928	MID092947928	09481137	11/30/1994		N	A	F003	H	548.0	0.0	0.0
									B	D009	H	0.0	550.0	0.0
									C	F003	H	0.0	30.0	0.0
									D	D002	H	1.0	0.0	0.0
	TSD	MIT270013709		MID092947928	09542338	11/30/1994		N	A	F003	H	548.0	0.0	0.0
									B	D009	H	0.0	550.0	0.0
									C	F003	H	0.0	30.0	0.0
									D	D002	H	1.0	0.0	0.0
MI3667971	GEN	MID985614932	MID092947928	MID092947928	09481136	11/30/1994		N	A	F003	H	23.0	0.0	0.0
	TSD	MID985614932		MID092947928	09542336	11/30/1994		N	A	F003	H	23.0	0.0	0.0
MI3667973	GEN	MID072576556	MID092947928	MID092947928	09510613	12/02/1994		N	A	F003	H	0.0	15.0	0.0
									B	D009	H	0.0	120.0	0.0
									C	D009	H	0.0	40.0	0.0
									D	D001	H	0.0	10.0	0.0
	TSD	MID072576556		MID092947928	09601620	12/02/1994		N	A	F003	H	0.0	15.0	0.0
									B	D009	H	0.0	120.0	0.0
									C	D009	H	0.0	40.0	0.0
									D	D001	H	0.0	10.0	0.0
MI3667976	GEN	MIG000007560	MID092947928	MID092947928	09532552	12/05/1994		N	A	F003	H	0.0	120.0	0.0
									B	D002	H	0.0	20.0	0.0
									C	D001	H	0.0	45.0	0.0
	TSD	MIG000007560		MID092947928	09601618	12/05/1994		N	A	F003	H	0.0	120.0	0.0
									B	D002	H	0.0	20.0	0.0
									C	D001	H	0.0	45.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667977	GEN	MIG000017418	MID092947928	MID092947928	09480320	12/02/1994	N		A	D002	H	0.0	450.0	0.0
	TSD	MIG000017418		MID092947928	09601619	12/02/1994	N		A	D002	H	0.0	450.0	0.0
MI3667978	GEN	MID005380126	MID092947928	MID092947928	09570984	12/08/1994	N		A	F003	H	0.0	300.0	0.0
									B	D001	H	0.0	20.0	0.0
									C	D002	H	0.0	110.0	0.0
									D	D022	H	0.0	45.0	0.0
	TSD	MID005380126		MID092947928	09601604	12/08/1994	N		A	F003	H	0.0	300.0	0.0
									B	D001	H	0.0	20.0	0.0
									C	D002	H	0.0	110.0	0.0
									D	D022	H	0.0	45.0	0 0
MI3667979	GEN	MID005380126	MID092947928	MID092947928	09570985	12/08/1994	N		A	D009	H	0.0	20.0	0.0
									B	D009	H	0.0	35.0	0.0
									C	029L	N	0.0	40.0	0.0
	TSD	MID005380126		MID092947928	09601605	12/08/1994	N		A	D009	H	0.0	20 0	0.0
									B	D009	H	0.0	35.0	0.0
									C	029L	N	0.0	40.0	0 0
MI3667984	GEN	MID106756059	MID092947928	MID092947928	09530807	12/12/1994	N		A	D001	H	0.0	10.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	F003	H	0.0	110.0	0.0
									D	006L	N	0.0	300.0	0.0
	TSD	MID106756059		MID092947928	09601600	12/12/1994	N		A	D001	H	0.0	10.0	0.0
									B	D001	H	0.0	5.0	0.0
									C	F003	H	0.0	110.0	0.0
									D	006L	N	0.0	300.0	0.0
MI3667985	GEN	MID106756059	MID092947928	MID092947928	09530806	12/12/1994	N		A	D004	H	0.0	50.0	0.0
									B	D005	H	0.0	160.0	0.0
									C	F002	H	0.0	40.0	0 0
	TSD	MID106756059		MID092947928	09601599	12/12/1994	N		A	D004	H	0.0	50.0	0 0
									B	D005	H	0.0	160.0	0 0
									C	F002	H	0.0	40.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3667990	GEN	MID985643774	MID092947928	MID092947928	09702434	12/16/1994	N		A	D003	H	0.0	10.0	0.0
	TSD	MID985643774		MID092947928	09651708	12/16/1994	N		A	D003	H	0.0	10.0	0.0
MI3667991	TSD	MID072575897		MID092947928	09601584	12/19/1994	N		A	F003	H	0.0	1900.0	0.0
									B	D001	H	0.0	210.0	0.0
									C	D001	H	0.0	300.0	0.0
									D	D002	H	0.0	25.0	0.0
MI3667992	TSD	MID072575897		MID092947928	09601586	12/19/1994	N		A	D002	H	0.0	40.0	0.0
									B	D002	H	0.0	600.0	0.0
									C	029L	N	0.0	2400.0	0.0
									D	029L	N	0.0	1950.0	0.0
MI3667993	TSD	MID072575897		MID092947928	09601585	12/19/1994	N		A	D001	H	0.0	2600.0	0.0
									B	029L	N	0.0	410.0	0.0
MI3667996	GEN	MID006012801	MID092947928	MID092947928	09571256	12/06/1994	N		A	F003	H	0.0	650.0	0.0
									B	F003	H	0.0	5.0	0.0
									C	F005	H	0.0	75.0	0 0
									D	D001	H	0.0	450.0	0.0
	TSD	MID006012801		MID092947928	09601613	12/06/1994	N		A	F003	H	0.0	650.0	0.0
									B	F003	H	0.0	5.0	0.0
									C	F005	H	0.0	75.0	0.0
									D	D001	H	0.0	450.0	0.0
MI3667998	GEN	OHD051623734	MID092947928	MID092947928	09590598	12/29/1994	N		A	D002	H	0.0	115.0	0.0
									B	D009	H	0.0	25.0	0.0
									C	D005	H	0.0	135.0	0.0
									D	D008	H	0.0	15.0	0.0
	TSD	OHD051623734		MID092947928	09601529	12/29/1994	N		A	D002	H	0.0	115.0	0.0
									B	D009	H	0.0	25.0	0.0
									C	D005	H	0.0	135.0	0.0
									D	D008	H	0.0	15.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3690377	GEN	IND984979864	INT190010397	MID092947928	09882054	10/12/1994		N	A	U036	H	0.0	10.0	0.0
									B	U240	H	0.0	6.0	0.0
	TSD	IND984979864		MID092947928	09841192	10/28/1994		N	A	U036	H	0.0	10.0	0.0
									B	U240	H	0.0	6.0	0 0
MI3690378	GEN	OHD980619647	INT190010397	MID092947928	09392093	10/25/1994		Y	A	D002	N	3.0	0.0	0.0
									B	D001	N	0.0	10.0	0.0
									C	D005	N	0.0	10.0	0.0
	TSD	OHD980619647	MID096963194	MID092947928	09412787	10/28/1994		Y	A	D002	N	3.0	0.0	0.0
									B	D001	N	0.0	10.0	0.0
									C	D005	N	0.0	10.0	0.0
MI3693521	GEN	MID053343976	MID092947928	MID092947928	09372352	10/19/1994		N	A	F003	H	605.0	0.0	0.0
									B	F003	H	55.0	0.0	0.0
									C	F003	H	55.0	0.0	0.0
									D	F003	H	0.0	82.0	0.0
	TSD	MID053343976		MID092947928	09412466	10/19/1994		N	A	F003	H	605.0	0.0	0.0
									B	F003	H	55.0	0.0	0.0
									C	F003	H	55.0	0.0	0 0
									D	F003	H	0.0	82.0	0.0
MI3693523	GEN	MID053343976	MID092947928	MID092947928	09372397	10/19/1994		N	A	D001	H	30.0	0.0	0 0
									B	D002	H	55.0	0.0	0.0
									C	D002	H	55.0	0.0	0.0
									D	029L	N	55.0	0.0	0.0
	TSD	MID053343976		MID092947928	09412467	10/19/1994		N	A	D001	H	30.0	0.0	0 0
									B	D002	H	55.0	0.0	0.0
									C	D002	H	55.0	0.0	0 0
									D	029L	N	55.0	0.0	0.0
MI3693524	GEN	MID053343976	MID092947928	MID092947928	09372353	10/19/1994		N	A	D009	H	0.0	32.0	0.0
									B	F003	H	0.0	306.0	0.0
									C	F003	H	0.0	66.0	0.0
									D	D002	H	0.0	78.0	0.0
	TSD	MID053343976		MID092947928	09412468	10/19/1994		N	A	D009	H	0.0	32.0	0.0
									B	F003	H	0.0	306.0	0.0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3693524	TSD	MID053343976		MID092947928	09412468	10/19/1994		N	C	F003	H	0.0	66.0	0.0
									D	D002	H	0.0	78.0	0.0
MI3693527	GEN	MID053343976	MID092947928	MID092947928	09462094	11/09/1994		N	A	D002	H	55.0	0.0	0.0
									B	D002	H	55.0	0.0	0.0
									C	D001	H	2.0	0.0	0.0
									D	D008	H	0.0	115.0	0.0
	TSD	MID053343976		MID092947928	09542147	11/09/1994		N	A	D002	H	55.0	0.0	0.0
									B	D002	H	55.0	0.0	0.0
									C	D001	H	2.0	0.0	0.0
									D	D008	H	0.0	115.0	0.0
MI3693528	GEN	MID053343976	MID092947928	MID092947928	09462093	11/09/1994		N	A	029L	N	110.0	0.0	0.0
									B	P115	H	0.0	230.0	0.0
									C	D001	H	30.0	0.0	0.0
									D	D001	H	70.0	0.0	0.0
	TSD	MID053343976		MID092947928	09542146	11/09/1994		N	A	029L	N	110.0	0.0	0.0
									B	P115	H	0.0	230.0	0.0
									C	D001	H	30.0	0.0	0.0
									D	D001	H	70.0	0.0	0.0
MI3693532	GEN	MID053343976	MID092947928	MID092947928	09571176	12/07/1994		N	A	F003	H	495.0	0.0	0.0
									B	F003	H	55.0	0.0	0.0
									C	D008	H	0.0	550.0	0.0
									D	D001	H	85.0	0.0	0.0
	TSD	MID053343976		MID092947928	09601608	12/07/1994		N	A	F003	H	495.0	0.0	0.0
									B	F003	H	55.0	0.0	0.0
									C	D008	H	0.0	550.0	0.0
									D	D001	H	85.0	0.0	0.0
MI3693533	GEN	MID053343976	MID092947928	MID092947928	09571177	12/07/1994		N	A	U006	H	2.0	0.0	0.0
									B	P014	H	2.0	0.0	0.0
									C	D004	H	0.0	7.0	0.0
									D	029L	N	55.0	0.0	0.0
	TSD	MID053343976		MID092947928	09601606	12/07/1994		N	A	U006	H	2.0	0.0	0.0
									B	P014	H	2.0	0.0	0.0
									C	D004	H	0.0	7.0	0.0
									D	029L	N	55.0	0.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR TSD MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3693534	GEN	MID053343976	MID092947928	MID092947928	09571183	12/07/1994		N	A	D001	H	0.0	201.0	0.0
									B	D009	H	0.0	494.0	0.0
	TSD	MID053343976		MID092947928	09601609	12/07/1994		N	A	D001	H	0.0	201.0	0.0
									B	D009	H	0.0	494.0	0.0
MI3693536	GEN	MID053343976	MID092947928	MID092947928	09571154	12/21/1994		N	A	D001	H	440.0	0.0	0.0
									B	F003	H	440.0	0.0	0.0
									C	F003	H	55.0	0.0	0.0
									D	F003	H	110.0	0.0	0.0
	TSD	MID053343976		MID092947928	09601515	12/21/1994		N	A	D001	H	440.0	0.0	0.0
									B	F003	H	440.0	0.0	0.0
									C	F003	H	55.0	0.0	0.0
									D	F003	H	110.0	0.0	0.0
MI3693537	GEN	MID053343976	MID092947928	MID092947928	09571153	12/21/1994		N	A	D002	H	55.0	0.0	0.0
									B	U052	H	2.0	0.0	0.0
									C	F003	H	3.0	0.0	0.0
									D	D009	H	2.0	0.0	0.0
	TSD	MID053343976		MID092947928	09601514	12/21/1994		N	A	D002	H	55.0	0.0	0 0
									B	U052	H	2.0	0.0	0.0
									C	F003	H	3.0	0.0	0.0
									D	D009	H	2.0	0.0	0.0
MI3693539	GEN	MID053343976	MID092947928	MID092947928	09630657	12/21/1994		N	A	F003	H	0.0	144.0	0.0
									B	F003	H	0.0	100.0	0.0
									C	D002	H	0.0	46.0	0.0
									D	D003	H	0.0	400.0	0.0
	TSD	MID053343976		MID092947928	09601516	12/21/1994		N	A	F003	H	0.0	144.0	0.0
									B	F003	H	0.0	100.0	0.0
									C	D002	H	0.0	46.0	0.0
									D	D003	H	0.0	400.0	0.0
MI3693541	GEN	MID053343976	MID092947928	MID092947928	09652749	01/18/1995		N	A	D002	H	55.0	0.0	0.0
									B	D002	H	110.0	0.0	0.0
									C	D002	H	55.0	0.0	0 0
									D	D002	H	2.0	0.0	0 0

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MICHIGAN DEPARTMENT NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3693541	TSD	MID053343976		MID092947928	09721501	01/18/1995		N	A	D002	H	55.0	0.0	0.0
									B	D002	H	110.0	0.0	0.0
									C	D002	H	55.0	0.0	0 0
									D	D002	H	2.0	0.0	0.0
MI3693542	GEN	MID053343976	MID092947928	MID092947928	09652750	01/18/1995		N	A	D009	H	5.0	0.0	0 0
									B	P105	H	0.0	80.0	0.0
									C	D002	H	1.0	0.0	0.0
									D	D001	H	1.0	0.0	0.0
	TSD	MID053343976		MID092947928	09721502	01/18/1995		N	A	D009	H	5.0	0.0	0.0
									B	P105	H	0.0	80.0	0.0
									C	D002	H	1.0	0.0	0 0
									D	D001	H	1.0	0.0	0.0
MI3693543	GEN	MID053343976	MID092947928	MID092947928	09652751	01/18/1995		N	A	U165	H	0.0	12.0	0 0
									B	D003	H	0.0	10.0	0 0
									C	D001	H	0.0	15.0	0.0
									D	D003	H	0.0	25.0	0.0
	TSD	MID053343976		MID092947928	09721503	01/18/1995		N	A	U165	H	0.0	12.0	0 0
									B	D003	H	0.0	10.0	0.0
									C	D001	H	0.0	15.0	0.0
									D	D003	H	0.0	25.0	0.0
MI3693778	GEN	MID053343976	MID092947928	MID092947928	09462095	11/09/1994		N	A	F003	H	0.0	226.0	0.0
									B	F003	H	0.0	66.0	0.0
									C	D002	H	0.0	110.0	0.0
									D	F002	H	660.0	0.0	0.0
	TSD	MID053343976		MID092947928	09542148	11/09/1994		N	A	F003	H	0.0	226.0	0.0
									B	F003	H	0.0	66.0	0 0
									C	D002	H	0.0	110.0	0.0
									D	F002	H	660.0	0.0	0.0
MI3693848	GEN	MID053343976	MID092947928	MID092947928	09571184	12/07/1994		N	A	D002	H	0.0	42.0	0.0
									B	F003	H	0.0	316.0	0 0
									C	F003	H	0.0	51.0	0.0
									D	D003	H	0.0	120.0	0 0
	TSD	MID053343976		MID092947928	09601607	12/07/1994		N	A	D002	H	0.0	42.0	0.0
									B	F003	H	0.0	316.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3693848	TSD	MID053343976		MID092947928	09601607	12/07/1994		N	C	F003	H	0.0	51.0	0.0
									D	D003	H	0.0	120.0	0.0
MI3693939	GEN	MID053343976	MID092947928	MID092947928	09652748	01/18/1995		N	A	F003	H	0.0	254.0	0.0
									B	F003	H	0.0	120.0	0.0
									C	D002	H	0.0	112.0	0.0
									D	F002	H	600.0	0.0	0.0
	TSD	MID053343976		MID092947928	09721504	01/18/1995		N	A	F003	H	0.0	254.0	0.0
									B	F003	H	0.0	120 0	0 0
									C	D002	H	0.0	112.0	0 0
									D	F002	H	600.0	0.0	0.0
MI3693961	GEN	MID053343976	MID092947928	MID092947928	09670488	01/26/1995		N	A	P095	H	0.0	25.0	0.0
									B	P076	H	0.0	10.0	0.0
									C	P078	H	0.0	5.0	0.0
									D	U067	H	0.0	60.0	0.0
	TSD	MID053343976		MID092947928	09721499	01/26/1995		N	A	P095	H	0.0	25.0	0.0
									B	P076	H	0.0	10.0	0.0
									C	P078	H	0.0	5.0	0.0
									D	U067	H	0.0	60.0	0.0
MI3697449	TSD	MID005380126		MID092947928	09450705	10/28/1994		N	A	029L	N	0.0	450.0	0.0
MI3697450	TSD	MIG000017987		MID092947928	09412493	10/06/1994		N	A	D001	H	0.0	5.0	0.0
									B	D002	H	0.0	60.0	0.0
									C	D002	H	0.0	15.0	0 0
									D	021L	N	0.0	600.0	0 0
MI3716565	GEN	MID064181076	MID092947928	MID092947928	09602787	01/03/1995		N	A	D001	H	24.0	0.0	0.0
									B	D002	H	2.0	0.0	0.0
									C	D001	H	12.0	0.0	0.0
									D	D002	H	13.0	0.0	0.0
	TSD	MID064181076		MID092947928	09721306	01/03/1995		N	A	D001	H	24.0	0.0	0.0
									B	D002	H	2.0	0.0	0.0
									C	D001	H	12.0	0.0	0.0
									D	D002	H	13.0	0.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T MID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI3716566	GEN	MID064181076	MID092947928	MID092947928	09602788	01/03/1995		N	A	D002	H	27.0	0.0	0.0
									B	U028	H	5.0	0.0	0.0
									C	D009	H	0.0	10.0	0.0
	TSD	MID064181076		MID092947928	09721304	01/03/1995		N	A	D002	H	27.0	0.0	0.0
									B	U028	H	5.0	0.0	0 0
									C	D009	H	0.0	10.0	0.0
MI3747522	GEN	WV5360010255	VA0000122994	MID092947928	09431739	10/20/1994		N	A	F003	H	0.0	25.0	0 0
									B	D001	H	0.0	2.0	0.0
									C	D009	H	0.0	75.0	0.0
									D	D001	H	0.0	15.0	0 0
	TSD	WV5360010255		MID092947928	09412785	10/28/1994		N	A	F003	H	0.0	25.0	0.0
									B	D001	H	0.0	2.0	0.0
									C	D009	H	0.0	75.0	0.0
									D	D001	H	0.0	15.0	0.0
MI3747524	TSD	VAD066017138		MID092947928	09662187	12/22/1994		N	A	D002	N	6.0	0.0	0.0
									B	U144	N	0.0	2.0	0.0
MI3747525	GEN	WV5360010255	VA0000122994	MID092947928	09421320	10/20/1994		N	A	002L	N	0.0	5.0	0.0
									B	U210	H	0.0	15.0	0 0
MI3747562	TSD	VAP000008762		MID092947928	09691230	12/22/1994		N	A	D002	H	0.0	35.0	0.0
									B	D002	H	0.0	25.0	0.0
									C	U151	H	0.0	5.0	0.0
									D	D002	H	0.0	15.0	0.0
MI3747564	TSD	VAP000008762		MID092947928	09712357	12/22/1994		N	A	D001	H	0.0	1.0	0 0
									B	P105	H	0.0	4.0	0.0
MI4101863	TSD	VAP000008664		MID092947928	09760752	01/04/1995		N	A	D008	H	0.0	500 0	0 0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION MANIFEST TRACKING SYSTEM
MANIFESTS FOR T .ID092947928

MANIFEST	COPY	GENERATOR	HAULER	TSD	CURRMICRO	DATE SHIP/RCVD	REJ	ERR	LOT	WCODE	HAZ	GAL	LB	CUYD
MI4101867	GEN	VAP000008821	VAD988166435	MID092947928	09650841	01/03/1995		N	A	D011	H	0.0	61.0	0.0
									B	D002	H	0.0	42.0	0 0
									C	U019	H	0.0	30.0	0.0
									D	P075	H	0.0	30.0	0 0
	TSD	VAP000008821		MID092947928	09721303	01/04/1995		N	A	D011	H	0.0	61.0	0.0
									B	D002	H	0.0	42.0	0.0
									C	U019	H	0.0	30.0	0 0
									D	P075	H	0.0	30.0	0.0
MI4101868	GEN	VAP000008821	VAD988166435	MID092947928	09652758	01/03/1995		N	A	D001	H	0.0	30.0	0.0
	TSD	VAP000008821		MID092947928	09721302	01/04/1995		N	A	D001	H	0.0	30.0	0.0

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1969. Failure section ... of Section 10 of Act 136, P.A. 1969.

MEN01236

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: HA047

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Allegan Co.)
331 Broad St.
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3103664

B. State Generator's ID:

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.

6. US EPA ID Number: MID092947928

C. State Transporter's ID:

D. Transporter's Phone:

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID:

H. Facility's Phone:

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	CORROSIVE SOLID n.o.s., 8, UN1759, PG II, (Sodium hydroxide)	001	CF	10	P	N/A	
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
1 of a) HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household items.

K. Handling Codes for Wastes Listed Above
a/ H /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year 10 22 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year 10 22 94

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 22 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

To be mailed by TSD Facility to: Michigan DNR Box 30038 Lansing, MI 48909

PR 5110 Rev. 10/92

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure to section 29 Act 136, P.

MEN01237

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MIDD7944428 Manifest Document No. 940316

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
McLaren Regional Medical Center
401 S. Ballenger Highway
Flint MI 48504-4499

4. Generator's Phone (810) 762-2000

A. State Manifest Document Number MI 3593825

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	Regulated medical waste, 6.2, NA9275, PGII (tissue samples in formalin)	X	4	DM	190	P	029L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Kevin Wilson — Signature — Date: Month Day Year 100794

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: STEVEN V. BARKER — Signature — Date: Month Day Year 100794

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Kevin Jay Berghuis — Signature — Date: Month Day Year 100794

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) Previous edition is obsolete. Michigan Draft Form 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1969 Failure section Act 136

MEN01238

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MIT270010598 — Manifest Document No: 44244

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
University of Michigan
1077 N.University Bldg.,1205 N.Univ.Ave.
Ann Arbor MI 48109-1057

4 Generator's Phone (313) 763-4568

A State Manifest Document Number: MI 359[illegible]

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal Inc — 6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name — 8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

11 US DOT Description (including Proper Shipping Name Hazard Class and ID NUMBER)	HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	COMBUSTIBLE LIQUIDS, N O S. COMBUSTIBLE LIQUIDS, NA 1993, PG III (PUMP OIL AND GLYCOL)	5	CF	120	P	029L	N
b		ACT 136 REGULATED MATERIAL (WATER TREATMENT CHEMICALS)	4	DM	950	P	029L	N
c								
d								

J Additional Descriptions for Materials Listed Above

K Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15 Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment storage or disposal currently available to me which minimizes the present and future threat to human health and the environment OR if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: Martha Breinpiser — Signature: Martha E. Breinpiser — Date: Month 10 Day 11 Year 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: STEVEN V. BARKER — Signature: Steven V. Barker — Date: Month 10 Day 11 Year 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month 10 Day 11 Year 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 5 7 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PH 5110 Rev 10/92

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1963 Failure I section Act 136

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Form Approved OMB No 2050 0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: 14095

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Allegan County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 5593918

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	PAINT, 3, UN1263, PG III (RQ-10)	011	DM	03000	P	N/A	
b	X	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PG II, (gasoline, paint thinner)	015	DM	02000	P	N/A	
c	X	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PG II, (gasoline, paint thinner)	006	CF	00120	P	N/A	
d	X	CORROSIVE LIQUID, n.o.s., 8, UN1760, PG II, (muriatic acid, sulfuric acid)	002	CF	00020	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H
b/H
c/H
d/H

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment OR if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month 10 Day 22 Year 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month 10 Day 22 Year 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month 10 Day 22 Year 94

GENERATOR — TRANSPORTER — FACILITY

ALL FILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 17 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800-424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 3/88)

PR 5110 Rev 10/92

DNRD
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure to section 2 Act 136,

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M I D 0 9 2 9 4 7 9 2 8 — Manifest Document No. 1 4 0 9 6
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Allegan County)
331 Broad Street
Plainwell, MI 49080
4. Generator's Phone (616) 685-9824

A. State Manifest Document Number MI 3593919
B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8
G. State Facility's ID
H. Facility's Phone

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. ~~POISONOUS, SOLID, TOXIC, n.o.s.,~~							
b. PESTICIDE, SOLID, TOXIC, n.o.s., 6.1, UN2588, PGII, (DDT, chlordane)	X	001	DM	100	P	N/A	
c. PESTICIDE, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PGII (DDT, chlordane)	X	001	DM	100	P	N/A	
d. PESTICIDE, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PGII (DDT, chlordane)	X	002	CF	20	P	N/A	

J. Additional Descriptions for Materials Listed Above lot a not taken
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/~~H~~/
b/H/
c/H/
d/H/

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month Day Year 1 0 2 2 9 4

17. Transporter 1 Acknowledgement of Receipt of Materials — Date
TRANSPORTER — Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month Day Year 1 0 2 2 9 4

18. Transporter 2 Acknowledgement of Receipt of Materials — Date
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

FACILITY — 20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date
Printed/Typed Name: Kevin Jay Berghuis — Signature — Date: Month Day Year 1 0 2 2 9 4

ALL FAILURES MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) — PR 5110 Rev. 10/92

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure section Act 13

MEN01241

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: 14097

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Mackinac Island)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3593920

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (Including Proper Shipping Name, Hazard Class and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	PAINT, 3, UN1263, PG II	X	009	DM	2475	P	N/A	
b	FLAMMABLE LIQUIDS, n.o.s, 3, UN1993, PG II (gasoline, paint thinners)	X	002	DM	225	P	N/A	
c	FLAMMABLE LIQUIDS, n.o.s, 3, UN1993, PG II (gasoline, paint thinners)	X	002	CF	50	P	N/A	
d	PESTICIDE, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PG II (pyrethrins, phenolic resins)	X	001	DM	75	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: KEVIN JAY BERGHUIS — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KEVIN JAY BERGHUIS — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4098

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Mackinac Island)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3593921

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	PESTICIDES, SOLID, TOXIC, n.o.s., 6.1, UN2588, PG II (rose dust, captan)	001	DF	40	P	N/A	
b.	X	AEROSOLS, 2.1, UN1950	001	DF	75	P	N/A	
c.	X	CORROSIVE LIQUIDS, n.o.s., 8, UN1760, PG II (sulfuric acid, silver chloride)	001	CF ~~DF~~	20	P	N/A	
d.	X	CORROSIVE LIQUIDS, n.o.s., 8, UN1760, PG II (sodium hydroxide)	001	CF	30	P	N/A	

J. Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

15. Special Handling Instructions and Additional Information
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Printed/Typed Name: KEVIN JAY BERGHUIS — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KEVIN JAY BERGHUIS — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 15 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

DNRD
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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1-89
Fail or Section Act 1

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 | Manifest Document No: 14104

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Genesee County)
331 Broad Street Swartz Creek Site
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI [illegible]

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name Hazard Class and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	Paint, 3, UN 1263, PG II.	010	DM	3000	P	N/A	
b	X	Flammable liquid, n.o.s., 3, UN 1993, PG II. (Gasoline, kerosene)	009	DM	2250	P	N/A	
c	X	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902 PG III (malathion, Diazinon)	002	DM	250	P	N/A	
d	X	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902. PG III. (malathion, Diazinon)	010	CF	250	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment storage or disposal currently available to me which minimizes the present and future threat to human health and the environment OR if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: Thomas Souter | Signature: T Souter | Date: Month Day Year 10 15 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter | Signature: T Souter | Date: Month Day Year 10 15 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

19 Discrepancy Indication Space

NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis | Signature: Kevin Jay Berghuis | Date: Month Day Year 10 15 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110
Rev 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4105

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Genesee County)
331 Broad Street Swartz Creek Site
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3593928

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	Aerosols, 2.1, UN1950	001	CF	15	P	N/A	
b.	X	mercury, 8, UN2809, PGIII (RQ=1#)	001	DF	10	P	N/A	
c.	X	corrosive liquid, n.o.s., 8, UN1760, PGII. (muriatic acid, Phosphoric acid)	004	CF	80	P	N/A	
d.	X	~~corro~~ caustic alkali liquids, n.o.s., 8, UN1719, PGII. (sodium hydroxide, calcium hydroxide)	001	DM	75	P	N/A	

J. Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 15 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 15 94

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 15 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

DNRE
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M|I|D|0|9|2|9|4|7|9|2|8 — Manifest Document No. 1|4|1|0|6

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Genesee County)
331 Broad Street Swartz Creek Site
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number MI 3590920

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	NOT CLASSIFIED (solid pesticide)	dol	DM	1125	P	N/A	
b.	NOT CLASSIFIED (solid pesticide)	dol	CF	210	P	N/A	
c.	Act 136 Regulated materials (Photo chemicals)	010	CF	125	P	N/A	
d.							

J. Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date (Month Day Year): 10 15 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date (Month Day Year): 10 15 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date (Month Day Year):

19. Discrepancy Indication Space
NOV 10 [illegible]

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: [signature] — Date (Month Day Year): 10 15 94

GENERATOR — TRANSPORTER — FACILITY

...IGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE ...LS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN... AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) — Michigan Department of Natural Resources — PR 5110 Rev. 10/92

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MTD092947928 Manifest Document No: 114118

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Lamet County)
331 Broad Street
Plainwell, MI 49080

A State Manifest Document Number: MI [illegible]

B State Generator's ID

4 Generator's Phone (616) 685-9824

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MTD092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: MTD092947928

G State Facility's ID

H Facility's Phone

GENERATOR

	11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I. Waste No.	N/H
a	Pesticide liquid, Toxic, n.o.s, 6.1, UN 2902, PG III. (malathion, Diazinon)	X	001	DF	185	P	N/A	
b	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902 PG III. (malathion, Diazinon)	X	001	DM	810	P	N/A	
c	Oxidizing Substances, solid, n.o.s., 5.1, UN 1479, PG II. (Contains Sodium Perborate)	X	001	CF	15	P	N/A	
d	Aerosols, 2.1, UN 1950	X	001	DM	15	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS.
Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

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Printed/Typed Name: Thomas Souter
Signature: [signature]
Date (Month Day Year): 10 10 94

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter
Signature: [signature]
Date (Month Day Year): 10 10 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

FACILITY

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: [signature]
Date (Month Day Year): 10 10 94

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706, OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

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OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: H4119

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Emmet County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI [illegible]

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

11 US DOT Description (including Proper Shipping Name Hazard Class and ID NUMBER)	HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	Corrosive liquid, n.o.s, 8, UN 1760, PG II. (muriatic acid, Phosphoric acid)	002	CF	40	P	N/A	
b	X	Caustic alkali liquids, n.o.s, 8, UN1719, PG II. (Sodium hydroxide Potassium hydroxide)	001	DM	45	P	N/A	
c		NOT CLASSIFIED (solid pesticide)	001	DM	80	P	N/A	
d		NOT CLASSIFIED (solid pesticide)	002	DF	60	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: Thomas Souter — Signature: [signature] — Date: Month Day Year 10 10 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter — Signature: [signature] — Date: Month Day Year 10 10 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space

NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 10 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700-22 (Rev 9/88)

PR 5110
Rev 10/92

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M I D 0 9 2 9 4 7 9 2 8
Manifest Document No: 4 0 9 9

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
(Genesee County)
Flint Site

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667510

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

	11 US DOT Description (Including Proper Shipping Name, Hazard Class and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	~~WASTE~~ FLAMMABLE LIQUID, n.o.s., 3, UN1993, PG II, (gasoline, ethylene glycol)	X	006	DM	020100	P	N/A	
b	PAINT, 3, UN1263, PG II	X	011	DM	013500	P	N/A	
c	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PG II, (gasoline ethylene glycol)	X	007	DF	1290	P	N/A	
d	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PG II, (gasoline, ethylene glycol)	X	003	CF	140	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H-1
b/H1
c/H1
d/H1

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: TIMOTHY V. FORBUSH
Signature
Date: Month 1 0 Day 1 5 Year 9 4

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH
Signature
Date: Month 1 0 Day 1 5 Year 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month 1 0 Day 1 5 Year 9 4

GENERATOR
TRANSPORTER
FACILITY

ALL MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)
PR 5110 Rev 10 92

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M I D 0 9 2 9 4 7 9 2 8
Manifest Document No: M 4 1 0 0

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
(Genesee County)
Flint Site

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667511

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G. State Facility's ID

H Facility's Phone

11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a CORROSIVE LIQUID, n.o.s., 8, UN1760, PG II, (nitric acid, hydrochloric acid)	X	002	DM	400	P	N/A	
b CORROSIVE LIQUID, n.o.s., 8, UN1760, PG II, (nitric acid, hydrochloric acid)	X	001	DF	110	P	N/A	
c CORROSIVE LIQUID, n.o.s., 8, UN1760, PG II, (nitric acid, hydrochloric acid)	X	001	CF	110	P	N/A	
d PESTICIDE, LIQUID, TOXIC, n.o.s., UN2902, PG II, (guthion, DDT)	X	001	DM	300	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

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Printed/Typed Name: TIMOTHY V. FORBUSH
Signature: [redacted]
Date: Month Day Year 1 0 1 5 9 4

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Timothy V. Forbush
Signature: [redacted]
Date: Month Day Year 1 0 1 5 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19 Discrepancy Indication Space
NOV 10

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month Day Year 1 0 1 5 9 4

ALLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

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OF NATURAL RESOURCES

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M I D 0 0 9 2 9 4 7 9 2 8 — Manifest Document No: 11 4 11 0 11

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Genesee County)
331 Broad Street Flint Site
Plainwell, MI 49080

A State Manifest Document Number: MI 3667512

B State Generator's ID

4 Generator's Phone (616) 685-9624

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M I D 0 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M I D 0 0 9 2 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

GENERATOR

	11 US DOT Description (Including Proper Shipping Name Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	PESTICIDE SOLID, TOXIC, n.o.s., 6.1, UN2588, PG II, (DDT, chlordane)	X	001	DM	200	P	N/A	
b	PESTICIDE, SOLID, TOXIC, n.o.s., 6.1, UN2588, PG II, (DDT, chlordane)	X	001	CF	10	P	N/A	
c	PESTICIDE, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PG II (gutrion, DDT)	X	001	CF	80	P	N/A	
d	PAINT, 3, ~~UN1263~~ UN1263, PG II	X	001	CF	10	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H 1
b/H 1
c/H 1
d/H 1

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month Day Year 1 0 1 5 9 4

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V FORBUSH — Signature — Date: Month Day Year 1 0 1 5 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature — Date: Month Day Year 1 0 1 5 9 4

EPA Form 8700-22 (Rev 9/88)

PR 5110
Rev 10/92

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MTD 092 9 4 7 9 2 8

Manifest Document No: 14 10 2

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
(Genesee County)
Flint Site

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667513

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.

6 US EPA ID Number: MTD 092 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name

8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MTD 092 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

GENERATOR

	11 US DOT Description (Including Proper Shipping Name, Hazard Class and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	MERCURY, 8, UN2809, PG III (RQ=1#)	X	001	DF	1 1/10	P	N/A	
b	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, 8, UN3028, PG III	X	001	DF	1 1/100	P	N/A	
c								
d								

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H /
b/H /
c/ /
d/ /

15 Special Handling Instructions and Additional Information
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Printed/Typed Name: TIMOTHY V. FORBUSH | Signature | Date: Month Day Year 10 15 94

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: TIMOTHY V FORBUSH | Signature | Date: Month Day Year 10 15 94

18 Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19 Discrepancy Indication Space

NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name: Kevin Jay Berghuis | Signature: Kevin Jay Berghuis | Date: Month Day Year 10 15 94

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M I D 0 9 2 9 4 7 9 2 8 — Manifest Document No. H 4 1 0 9

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (City of Holland)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3667515

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.

6. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	PAINT, 3, UN1263, PGII	041	DM	12300	P	N/A	
b.	X	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PGII, (gasoline, oil)	024	DM	07200	P	N/A	
c.	X	FLAMMABLE LIQUID, n.o.s., 3, UN1993, PGII, (gasoline, oil)	016	CF	1120	P	N/A	
d.	X	LIQUIFIED PETROLEUM GAS, 2.1, UN1075,	002	DM	150	P	N/A	

J. Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS.
Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above: a/ H / ; b/ H / ; c/ H / ; d/ H /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR — Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month 1 0 Day 0 1 Year 9 4

17. Transporter 1 Acknowledgement of Receipt of Materials

TRANSPORTER — Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month 1 0 Day 0 1 Year 1994

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

NOV 10 1994

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Kevin Jay Berghuis — Signature — Date: Month 1 0 Day 0 1 Year 9 4

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) — To be mailed by TSD Facility to: Michigan DNR Box 30038 Lansing, MI 48909

PR 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4110

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (City of Holland)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3667516

B. State Generator's ID:

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928

C. State Transporter's ID:
D. Transporter's Phone:

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID:
H. Facility's Phone:

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	PESTICIDES, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PG II (guthion, DDT)	001	CF	20	P	N/A	
b.	X	PESTICIDES, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PG II (guthion, DDT)	001	DF	50	P	N/A	
c.	X	PESTICIDES, LIQUID, TOXIC, n.o.s., 6.1, UN2902, PG II, (guthion, DDT)	001	DM	100	P	N/A	
d.	X	PESTICIDES, SOLID, TOXIC, n.o.s., 6.1, UN2588, PG II, (malathion, DDT)	003	DM	600	P	N/A	

J. Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above: a/H/ b/H/ c/H/ d/H/

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: TIMOTHY V FORBUSH — Signature: [signature] — Date: Month Day Year: 10 01 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year: 10 01 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 01 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

To be mailed by TSD Facility to: Michigan DNR, Box 30038, Lansing, MI 48909

PR 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4111

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (City of Holland)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3667517

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	OXIDIZING SUBSTANCES, SOLID, n.o.s., 5.1, UN1479, PG II (manganese nitrate, copper nitrate)	001	CF	20	P	N/A	
b.	X	POISONOUS SOLIDS, n.o.s., 6.1, UN2811, PG II (phenol, mercuric sulfate) RQ=1#	001	CF	15	P	N/A	
c.	X	CORROSIVE LIQUID n.o.s., 8, UN1760, PG II (hydrochloric & sulfuric acids)	003	CF	60	P	N/A	
d.	X	BATTERIES, DRY, CONTAING POTASSIUM HYDROXIDE SOLID, 8, UN3028, PG III	002	DF	150	P	N/A	

J. Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: TIMOTHY V FORBUSH — Signature: [signature] — Date: Month Day Year 10 01 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year 10 01 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 01 94

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M|T|D|0|9|2|9|4|7|9|2|8 — Manifest Document No: 1|4|1|1|2

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (City of Holland)
331 Broad Street
Plainwell, MI 49080

A State Manifest Document Number: MI 3667518

B State Generator's ID

4 Generator's Phone (616) 685-9824

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M|T|D|0|9|2|9|4|7|9|2|6

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M|T|D|0|9|2|9|4|7|9|2|8

G State Facility's ID

H Facility's Phone

GENERATOR

	11 US DOT Description (Including Proper Shipping Name, Hazard Class and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	NOT CLASSIFIED (materials contaminated with asbestos)		001	DM	50	P	N/A	
b	NOT CLASSIFIED (soaps, sodium chloride)		003	CF	70	P	N/A	
c								
d								

J Additional Descriptions for Materials Listed Above
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K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ /
d/ /

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Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month Day Year 1 0 0 1 9 4

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature — Date: Month Day Year 1 0 0 1 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19 Discrepancy Indication Space

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 1 0 0 1 9 4

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EPA Form 8700 22 (Rev 9/88)

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: 1 T D 0 9 2 9 4 7 9 2 8 — Manifest Document No: 0 4 1 1 7

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Emmet County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667549

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: 1 T D 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: 1 T D 0 9 2 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	Paint, 3, UN 1263, PG II.	014	DM	2800	P	N/A	
b	X	Flammable liquids, n o s, 3, UN 1993, PG II (Gasoline Kerosene)	004	DM	1200	P	N/A	
c	X	Flammable liquids, n o.s, 3, UN 1993, PG II (Mineral spirits, Acetone)	004	CF	80	P	N/A	
d	X	Flaminable liquids, n o s, 3, UN 1993, PG II (xylene, Turpentine)	001	DF	85	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d. HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Thomas Soulee — Signature: [signature] — Date: Month Day Year 10 10 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Soulee — Signature: [signature] — Date: Month Day Year 10 10 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 10 94

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY / LEPTIING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4113
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Incl (City of Holland)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3667644
B. State Generator's ID:

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928

C. State Transporter's ID:
D. Transporter's Phone:

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID:
H. Facility's Phone:

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	ACT 136 REGULATED MATERIAL (soap solutions, manganese solutions)	006	CF	150	P	N/A	
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS.
Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/ H /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year: 10 01 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIMOTHY V. FORBUSH — Signature: [signature] — Date: Month Day Year: 10 01 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 01 94

GENERATOR — TRANSPORTER — FACILITY

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EPA Form 8700-22 (Rev. 9/88)

To be mailed by TSD Facility to: Michigan DNR Box 30038 Lansing, MI 48909

PR 5110 Rev. 10/92

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MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: H4123

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Washtenaw County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667647

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	Paint, 3, UN 1263, PG II	012	DM	3600	P	N/A	
b	X	Paint, 3, UN 1263, PG III	002	CF	40	P	N/A	
c	X	Flammable liquid, n.o.s, 3, UN 1993, PG II. (mineral spirits Gasoline)	004	DM	800	P	N/A	
d	X	Flammable liquid, n.o.s, 3, UN 1993, PG II (mineral spirits, Adedone)	004	CF	80	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

15 Special Handling Instructions and Additional Information
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Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 17 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 17 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space

NOV 10 [illegible]

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 17 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110
Rev 10/92

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Form Approved OMB No 2050 0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M|I|D|0|9|2|9|4|7|9|2|8 Manifest Document No: 1|4|1|2|4

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Washtenaw County)
331 Broad Street
Plainwell, MI 49080
Generator's Phone ( ) 685-9824

A State Manifest Document Number: MI 3067648

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

G State Facility's ID

H Facility's Phone

	11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902, PG III. (malathion, Diazinon)	X	0 1 1	DM	1 2 0 0	P	N/A	
b	Aerosols, 2.1, UN 1950.	X	0 1 1	DM	1 1 5 0	P	N/A	
c	Poisonous liquids, n.o.s., 6.1, UN 2810, PG III. (carbon Tetrachloride, mercury)	X	0 1 2	DM	1 3 0 0	P	N/A	
d	Poisonous Solids, n.o.s., 6.1, UN 2811, PG III. (copper, zinc)	X	0 1 1	DM	1 1 5 0	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

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In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: Thomas Sauter
Signature: T. Sauter
Date (Month Day Year): 1 0 1 7 9 4

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Thomas Sauter
Signature: T. Sauter
Date (Month Day Year): 1 0 1 7 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Date (Month Day Year):

19 Discrepancy Indication Space

NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date (Month Day Year): 1 0 1 7 9 4

GENERATOR

TRANSPORTER

FACILITY

ALLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: H4125

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Washtenaw County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667649

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947923

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	Corrosive liquids, n.o.s., 8, UN 1760, PG II. (muriatic acid, Phosphoric acid)	X	002	CF	40	P	N/A	
b								
c								
d								

J Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: Thomas Sunter — Signature: [signature] — Date: Month Day Year 10 17 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Sunter — Signature: [signature] — Date: Month Day Year 10 17 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 17 94

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88) PR 5110 Rev 10/92

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M I D 0 9 2 9 4 7 9 2 8 — Manifest Document No: H 4 1 2 6

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Emmet County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3667755

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No.	N/H
a	X	Paint, 3, UN 1263, PG II.	010	DM	3000	P	N/A	
b	X	Aerosols, 2 1, UN 1950.	001	DM	100	P	N/A	
c	X	Flammable liquids, n.o.s., 3, UN 1993, PG II. (Gasoline, fuel oil)	004	DM	1200	P	N/A	
d	X	Flammable liquids, n.o.s., 3, UN 1993, PG II (mineral spirits, Acetone)	006	CF	150	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/ H /
b/ H /
c/ H /
d/ H /

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Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 26 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter — Signature: T Souter — Date: Month Day Year 10 26 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space

NOV 1 0 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 26 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M I D 0 9 2 9 4 7 9 2 8 — Manifest Document No. H 4 1 2 7

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Emmet County)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3667756

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.

6. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
GENERATOR a.	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902, PG III. (Malathion, Diazinon)	X	013	DM	1450	P	N/A	
b.	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902, PG III. (Malathion, Diazinon)	X	012	CF	1415	P	N/A	
c.	Corrosive liquid, n.o.s., 8, UN 1760, PG II. (Muriatic acid, Phosphoric acid)	X	011	CF	1115	P	N/A	
d.	Caustic alkali liquids, n.o.s., 8, UN 1719, PG II. (Sodium Hydroxide)	X	011	DM	1815	P	N/A	

J. Additional Descriptions for Materials Listed Above

11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above: a/H/ b/H/ c/H/ d/H/

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Printed/Typed Name: Thomas Sauter — Signature: Thomas Sauter — Date (Month Day Year): 10 26 94

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Thomas Sauter — Signature: [illegible] — Date (Month Day Year): 10 26 94

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date (Month Day Year): 10 26 94

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

Distribution: Generator — Transporter — Facility — Michigan DNR, Box 30028, Lansing, MI 48909

PR 5110 Rev. 10/92

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MID092947928 Manifest Document No. 114128

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Emmet County)
331 Broad Street
Plainwell, MI 49080

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number MI 3667757

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.

6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	NOT CLASSIFIED (solid pesticides)	04	DM	1200	P	N/A	
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/ H/
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: Thomas Souter
Signature: T Souter
Date (Month Day Year): 10 26 94

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter
Signature: T Souter
Date (Month Day Year): 10 26 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date (Month Day Year): 10 26 94

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete. Distribution: Facility to DNR; Generator; Transporter 1; Transporter 2; Facility to Generator; Facility to Transporter 1; Facility to Transporter 2; Facility to DNR. Michigan DNR, P.O. Box 30473, Lansing, MI 48909

PR 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MIG000011861 — Manifest Document No.: 9K0006

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Mallinckrodt Sensor Systems
1230 Eisenhower/P.O. Box 2387
Ann Arbor MI 48106

4. Generator's Phone (313) 973-7000

A. State Manifest Document Number: MI 3667779

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc.
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	Act 136 regulated material (antibacterial solution)	001	DF	125	P	0292	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
11a) 94% dipropylene glycol.

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

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Printed/Typed Name: PHILIP G. SMITS — Signature: Philip G. Smits — Date: Month 10 Day 19 Year 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Souter — Signature: T. Souter — Date: Month 10 Day 19 Year 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month 10 Day 19 Year 94

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4705 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MI 6 0 0 0 0 1 7 9 8 7 — Manifest Document No.: 94009

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Grand Rapids Community College
143 Bostwick, NE
Grand Rapids MI 49503

4. Generator's Phone (616) 771-3950

A. State Manifest Document Number: MI 3667780

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6. US EPA ID Number: MID092947928

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	COMBUSTIBLE LIQUIDS, N.O.S. COMBUSTIBLE LIQUIDS, NA 1993, PG III (NAPHTHA)	2	DM	65	P	029L	N
b.	X	FORMALDEHYDE SOLUTIONS, 9, UN 2209, PG III (FORMALDEHYDE WITH ANIMAL SPECIMENS) RQ=100#	4	DF	900	P	029L	N
c.								
d.								

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: DONALD SEEKELL — Signature: Donald Seekell — Date: Month Day Year: 10 24 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: STEVEN V. BARKER — Signature: Steven V Barker — Date: Month Day Year: 10 24 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space: Section 1, Manifest Document No. indicates 94009

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 24 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure to section 2 Act 136

MEN01266

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MIT270011059 Manifest Document No: 9201 6R

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address

University of Michigan
1077 N.University Bldg.,1205 N.Univ.Ave.
Ann Arbor MI 48109-1057

4 Generator's Phone (313) 763-4568

A State Manifest Document Number: MI 3667787

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6 US EPA ID Number: MID099294792

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name

8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address

Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10 US EPA ID Number: MID099294792

G State Facility's ID

H Facility's Phone

GENERATOR

11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a ACT 136 REGULATED MATERIALS (photographic fixer and developers)		003	DM	1275	P	029L	N
b ACT 136 REGULATED MATERIALS (drum oils)		001	DM	375	P	017L	N
c ACT 136 REGULATED MATERIALS (fuel oil/water mixture)		001	DM	250	P	029L	N
d ACT 136 REGULATED MATERIALS (formaldehyde, glutaraldehyde)		002	CF	60	P	006L	N

J Additional Descriptions for Materials Listed Above

Lots A-D) Spent Laboratory Chemicals and Products.

K Handling Codes for Wastes Listed Above

a/ /
b/ /
c/ /
d/ /

15 Special Handling Instructions and Additional Information

IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

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Printed/Typed Name: Michael Dressler — Signature — Date Month Day Year: 10 27 94

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DOUGLAS W. CONSTANCE — Signature — Date Month Day Year: 10 27 94

18 Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date Month Day Year

FACILITY

19 Discrepancy Indication Space

NOV 1 01994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name: Kevin Jay Berghuis — Signature — Date Month Day Year: 10 27 94

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

ALLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1989. Failure section Act 136

MEN01267

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MIT270010598 — Manifest Document No.: 942164
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
University of Michigan
1077 N.University Bldg.,1205 N.Univ.Ave.
Ann Arbor MI 48109-1057

4. Generator's Phone (313) 763-4568

A. State Manifest Document Number: MI 3667788
B. State Generator's ID:

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc
6. US EPA ID Number: MID092947928

C. State Transporter's ID:
D. Transporter's Phone:

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: MID092947928

G. State Facility's ID:
H. Facility's Phone:

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. ACT 136 REGULATED MATERIALS (stains, formalin)		001	DF	125	P	006L	N
b. ACT 136 REGULATED MATERIALS (sevin)		001	DM	150	P	013L	N
c.							
d.							

J. Additional Descriptions for Materials Listed Above
Lots A-B) Spent Laboratory Chemicals and Products.

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Michael L Dorsey — Signature: Michael L Dorsey — Date: Month Day Year 10 27 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DOUGLAS W CORSTANGE — Signature: Douglas W Corstange — Date: Month Day Year 10 27 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 27 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

To be mailed by TSD Facility to: Michigan DNR Box 30038 Lansing, MI 48909

PR 5110 Rev. 10/92

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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Failure Section Act 1

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID 0 0 0 1 2 4 0 5 — Manifest Document No: 94661

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Menasha Corporation
320 N. Farmer/P.O. Box 155
Otsego MI 49078-0155

4 Generator's Phone ( ) -92-5161

A State Manifest Document Number: MI 3667797

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal Inc
6 US EPA ID Number: MID 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080
10 US EPA ID Number: MID 0 9 2 9 4 7 9 2 8

G State Facility's ID

H. Facility's Phone

11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a ACT 136 REGULATED MATERIAL (SODIUM SILICATE SOLUTIONS)		2	DM	450	P	029L	N
b ACT 136 REGULATED MATERIAL (BOILER TREATMENT POLYMERS)		3	DF	140	P	029L	N
c ACT 136 REGULATED MATERIAL (BETZ 1165L POLYMER)		8	DM	2500	P	029L	N
d							

J Additional Descriptions for Materials Listed Above

K Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15 Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

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Printed/Typed Name: LEN F MYERS — Signature: Len E Myers — Date: Month Day Year 10 20 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: STEVEN V. BARKER — Signature: Steven V. Barker — Date: Month Day Year 10 20 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 20 94

GENERATOR — TRANSPORTER — FACILITY

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EPA Form 8700-22 (Rev 9/88)

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1989 Failure section Act 1

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID000012405 Manifest Document No: 94004

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Menasha Corporation
[illegible] Box 155
Otsego MI 49078-0155

4 Generator's Phone ([illegible]) 392-6141

A State Manifest Document Number: MI 3667796

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name

8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

11 US DOT Description (including Proper Shipping Name, Hazard Class and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a ACT 136 REGULATED MATERIAL (CALGON WATER TREATMENT)		6	DM	950	P	029L	N
b ACT 136 REGULATED MATERIAL (COSMOLINE AND POLYMERS)		6	DM	1300	P	029L	N
c ACT 136 REGULATED MATERIAL (ENERGO POLYMERS)		3	DM	900	P	029L	N
d ACT 136 REGULATED MATERIAL (ACRYLIC POLYMERS)		4	DM	1100	P	029L	N

J Additional Descriptions for Materials Listed Above

K Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15 Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

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Printed/Typed Name: LEN E MYERS
Signature: Len E Myers
Date: Month Day Year 10 20 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jeffrey L. Ramsey
Signature: Jeffrey L. Ramsey
Date: Month Day Year 10 20 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19 Discrepancy Indication Space

NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month Day Year 10 20 94

GENERATOR

TRANSPORTER

FACILITY

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EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

DNRD
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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M I 0 0 0 6 0 1 2 4 0 5 — Manifest Document No 914006

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Menasha Corporation
320 N. Farmer/P.O. Box 155
Otsego MI 49078-0155

4. Generator's Phone (616) 692-8141

A. State Manifest Document Number MI 3667803

B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal Inc

6. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal Inc
331 Broad Street
Plainwell MI 49080

10. US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	ACT 136 REGULATED MATERIAL (POLYMERS)	9	DM	1950	P	D29L	N
b.	ACT 136 REGULATED MATERIAL (FLOCCULANT POLYMERS)	3	DM	900	P	D29L	N
c.	ACT 136 REGULATED MATERIALS (BOILER TREATMENT CHEMICALS)	3	DM	850	P	D29L	N
d.							

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
IN CASE OF ACCIDENT CONTAIN MATERIAL AND CALL (616) 685-9824

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Printed/Typed Name: LEN F MYERS — Signature: Len E Myers — Date: Month 10 Day 27 Year 94

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Jeffrey L. Ramsey — Signature: Jeffrey L Ramsey — Date: Month 10 Day 27 Year 94

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month 10 Day 27 Year 94

GENERATOR — TRANSPORTER — FACILITY

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EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev. 10/92

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure to section act 136

MEN01271

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947983 Manifest Document No: 94 0[illegible]

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Mackinac Island)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3697271

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947920

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	BATTERIES, WET, FILLED WITH ACID, 8, UN2794, PG III	X	001	DF	95	P	N/A	
b	MERCURY, 8, UN2809, PG I	X	001	DF	2	P	N/A	
c	NOT CLASSIFIED (Alkaline batteries)		001	DF	125	P	N/A	
d								

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H /
b/H /
c/H /
d/ /

15 Special Handling Instructions and Additional Information
In case of accident, contain spill and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment storage or disposal currently available to me which minimizes the present and future threat to human health and the environment OR if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

GENERATOR

Printed/Typed Name: KEVIN JAY BERGHUIS
Signature: Kevin Jay Berghuis
Date (Month Day Year): 10 15 94

17 Transporter 1 Acknowledgement of Receipt of Materials

TRANSPORTER

Printed/Typed Name: KEVIN JAY BERGHUIS
Signature: Kevin Jay Berghuis
Date (Month Day Year): 10 15 94

18 Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Date (Month Day Year):

19 Discrepancy Indication Space

NOV 10 1994

FACILITY

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date (Month Day Year): 10 15 94

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

ALLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: H4075

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Ionia County) Ionia Site
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3697468

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class and ID NUMBER) HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	X	Paint, 3, UN1263, PG II	003	DM	600	P	N/A	
b	X	Pesticide liquid, toxic, n.o.s, 6 1, UN 2902. PG II (malathion, Diazinon)	001	DM	80	P	N/A	
c	X	Aerosols, 2 1, UN1950.	001	DM	75	P	N/A	
d		NOT CLASSIFIED (Solid pesticides)	001	DM	90	P	N/A	

J Additional Descriptions for Materials Listed Above
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K Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Thomas Senter — Signature: T Senter — Date: Month Day Year: 10 07 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Senter — Signature: T Senter — Date: Month Day Year: 10 07 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year: 10 07 94

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

PR 5110 Rev 10/92

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Failure to section 2 Act 136 P

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Form approved OMB No 2050 0039 Expires 3 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M I D 0 9 2 9 4 7 9 2 8
Manifest Document No: 1 4 0 7 7

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Kalamazoo County)
331 Broad Street
Plainwell, MI 49080

A State Manifest Document Number: MI 3697469

B State Generator's ID

4 Generator's Phone (616) 685-9824

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M I D 0 9 2 9 4 7 9 2 8

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	Paint, 3, UN 1263, PG II.	X	63 17	DM	5125 0	P	N/A	
b	Paint, 3, UN 1263, PG II,	X	66 6	DF	1400	P	N/A	
c	Aerosols, 2 1, UN 1950	X	66 2	DM	1800	P	N/A	
d	Corrosive liquids, n.o.s, 8, UN 1760, PG II. (muriatic acid, Phosphoric acid)	X	66 2	CF	1410	P	N/A	

J Additional Descriptions for Materials Listed Above
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K Handling Codes for Wastes Listed Above
a/H /
b/H /
c/H /
d/H /

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: Thomas Sauter
Signature: T Sauter
Date: Month Day Year 1 0 1 4 9 4

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Sauter
Signature: T Sauter
Date: Month Day Year 1 0 1 4 9 4

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis
Signature: Kevin Jay Berghuis
Date: Month Day Year 1 0 1 4 9 4

GENERATOR
TRANSPORTER
FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700 22 (Rev 9/88)

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Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MID092947928 — Manifest Document No.: H4076
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
(Ionia County)
Ionia Site

4. Generator's Phone (616) 685-9824

A. State Manifest Document Number: MI 3697470
B. State Generator's ID

5. Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6. US EPA ID Number: MID092947928
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10. US EPA ID Number: MID092947928
G. State Facility's ID
H. Facility's Phone

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	Pesticide liquid, Toxic, n.o.s., 6.1, UN 2902, PG II. (malathion, Diazinon)	002	CF	36	P	N/A	
b.	X	Corrosive liquid, n.o.s., 8, UN 1760, PG II. (muriatic acid, Phosphoric acid)	001	CF	16	P	N/A	
c.		NOT CLASSIFIED (Household batteries)	001	DF	25	P	N/A	
d.								

J. Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/ /

15. Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date: Month Day Year 10 07 94

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date: Month Day Year 10 07 94

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space
NOV 10 1994

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month Day Year 10 07 94

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

PR 5110
Rev. 10/92

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Form Approved OMB No 2050 0039 Expires 9 30 94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: MID092947928 — Manifest Document No: 14078

2 Page 1 of 1 — Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Kalamazoo County)
331 Broad Street
Plainwell, MI 49080

4 Generator's Phone (616) 685-9824

A State Manifest Document Number: MI 3697471

B State Generator's ID

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: MID092947928

C State Transporter's ID

D Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E State Transporter's ID

F Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080

10 US EPA ID Number: MID092947928

G State Facility's ID

H Facility's Phone

	11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM	12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No	N/H
a	Caustic alkali liquids, n.o.s., 8, UN 1719, PG II. (Potassium hydroxide, sodium hydroxide)	X	001	CF	10	P	N/A	
b	Oxidizing Substances Solid, n.o.s., 5.1, UN 1479, PG II (calcium hypochlorite)	X	001	DF	15	P	N/A	
c	Substances which in contact with water emit flammable gases, solid, n.o.s., 4.3, UN 2813, PG II. (Calcium carbide)	X	001	CF	5	P	N/A	
d	Flammable liquids, n.o.s., 3, UN 1993, PG II (Gasoline, Kerosene)	X	001	DM	400	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d: HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K Handling Codes for Wastes Listed Above
a/H/
b/H/
c/H/
d/H/

15 Special Handling Instructions and Additional Information
In case of accident, contain material and call (616) 685-9824.

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Printed/Typed Name: Thomas Santer — Signature: T Santer — Date: Month 10 Day 14 Year 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Santer — Signature: T Santer — Date: Month 10 Day 14 Year 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19 Discrepancy Indication Space
NOV 10 [illegible]

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: Kevin Jay Berghuis — Date: Month 10 Day 14 Year 94

GENERATOR — TRANSPORTER — FACILITY

ALL MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1 800 292 4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700-22 (Rev 9/88) PR 5110 Rev 10/92

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Failure section Act 136

MEN01276

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Form Approved OMB No 2050 0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: M|I|D|0|9|2|9|4|7|9|2|8 — Manifest Document No: H|4|D|7|9

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

3 Generator's Name and Mailing Address
Drug & Laboratory Disposal, Inc. (Kalamazoo County)
331 Broad Street
Plainwell, MI 49080

A. State Manifest Document Number: MI 3697472

B. State Generator's ID

4 Generator's Phone (616) 685-9824

5 Transporter 1 Company Name: Drug & Laboratory Disposal, Inc.
6 US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

C. State Transporter's ID

D. Transporter's Phone

7 Transporter 2 Company Name
8 US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9 Designated Facility Name and Site Address
Drug & Laboratory Disposal, Inc.
331 Broad Street
Plainwell, MI 49080
10 US EPA ID Number: M|I|D|0|9|2|9|4|7|9|2|8

G. State Facility's ID

H. Facility's Phone

11 US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER)	HM		12 Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I Waste No.	N/H
a	X	Flammable liquids, n.o.s, 3, UN 1993, PGII. (Mineral Spirits, Acetone)	011	DF	1250	P	N/A	
b	X	Pesticides, liquid, Toxic, n.o.s., 6.1, UN2902 PGIII. (Malathion Diazinon)	015	CF	1110	P	N/A	
c	X	Pesticides, liquid, Toxic, n.o.s., 6.1, ~~UN2902~~ UN 2902, PGIII. (Malathion, Diazinon)	011	Dm	1150	P	N/A	
d		NOT CLASSIFIED (Solid pesticide)	013	Dm	1300	P	N/A	

J Additional Descriptions for Materials Listed Above
11a,b,c,d:HOUSEHOLD HAZARDOUS WASTE. RCRA NONHAZARDOUS. Waste is potentially hazardous waste from households and includes paints, thinners, varnishes, cleaning products, pesticides, and other household waste.

K. Handling Codes for Wastes Listed Above
a/H
b/H
c/H
d/H

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Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date (Month Day Year): 10 14 94

17 Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Sauter — Signature: [signature] — Date (Month Day Year): 10 14 94

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date (Month Day Year)

19 Discrepancy Indication Space
NOV 10 1994

20 Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Kevin Jay Berghuis — Signature: [signature] — Date (Month Day Year): 10 14 94

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517 373 7660 AND THE NATIONAL RESPONSE CENTER AT 1 800 424 8802 24 HOURS PER DAY

EPA Form 8700-22 (Rev. 9/88)

PR 5110 Rev 10/92

DRUG AND LAB DISPOSAL

DOCUMENT #35H

H. June 19, 1995, letter to Keith Kling from DLD.

Drug & Laboratory Disposal, Inc.

Environmentally Correct
Disposal of all
Chemical Waste

331 Broad Street
Plainwell, MI 49080-1439

June 19, 1995

Keith Kling
Menasha Corporation
P.O. Box 155
Otsego, MI 49078-0155

Dear Mr. Kling:

It was a pleasure meeting with you and David Merkel on Monday, June 12, for the purpose of touring Drug & Laboratory Disposal, Inc. (DLD). I hope that the tour of DLD and the information provided in this letter are helpful.

Incorporated in 1977, DLD is licensed as a treatment, storage, and disposal facility (tsdf) by the United States Environmental Protection Agency (U.S. EPA). Our facility received interim status from the U.S. EPA in October, 1983, and became a fully licensed tsdf in March, 1986, when DLD received its Act 64 operating license from the State of Michigan. DLD is also a licensed PCB Commercial Storage Facility in interim status with the U.S. EPA. Our U.S. EPA Identification Number is MID 092 947 928.

Drug & Laboratory Disposal, Inc. is registered with the U.S. Department of Transportation as a transporter of hazardous materials. DLD is licensed by the State of Michigan Department of Natural Resources as a Hazardous Waste Transporter under the authority of Act 64, P.A. 1979, and as a Liquid Industrial Waste Hauler under the authority of Act 136, P.A. 1969.

Drug & Laboratory Disposal, Inc. is committed to protecting both the environment and the generator which uses our disposal services. To achieve this goal, DLD has adopted a policy of processing waste for high-efficiency, high-temperature incineration whenever possible and sending for burial into a chemically-secured, hazardous waste landfill only those wastes which should not be incinerated. DLD believes that high-efficiency, high-temperature incineration is superior to landfill burial as a permanent method of disposal.

FAX (616) 685-1130

MEN01280

All wastes received at DLD are segregated, processed, and placed in temporary storage before being shipped off-site for final disposal. All incoming waste containers and their accompanying manifests identify the generator and the site of generation, but once processed at our facility, those same wastes are labelled and manifested as having been generated by DLD. We cannot afford to be irresponsible with other generator's wastes because it actually becomes our waste as well. DLD regularly inspects the facilities it uses for ultimate disposal for verification that the technologies being employed are environmentally safe and in compliance with current regulations.

All company personnel who actually handle the chemical waste, from our Department of Transportation-qualified Hazardous Materials Chemists to our experienced Hazardous Waste Chemists, possess a four-year degree in the Sciences with additional specialized instruction in the proper handling of particularly reactive or toxic compounds. Our transportation personnel, in addition to their degree and special technical training, have been thoroughly trained to apply the appropriate federal and state regulations which must be considered when packaging, labelling, and manifesting chemical waste.

On October 20, 1994, and October 27, 1994, DLD removed various outdated chemical products discarded by Menasha Corporation in Otsego, Michigan. These chemical wastes were transported to DLD on the Michigan Department of Natural Resources Uniform Hazardous Waste Manifests MI 3667795, MI 3667796, MI 3667797, and MI 3667799 dated 10/20/94 and MI 3667802 and MI 3667803 dated 10/27/94. ?

At DLD, the chemical wastes were processed for disposal. All 55-gallon drums of chemical product are processed individually. The Hazardous Waste Chemists obtain a sample of the drum to verify its contents and to determine a proper disposal method. All pumpable liquids are commingled into bulk storage tanks for disposal. Any nonpumpable waste found in a drum is transferred to a 55-gallon openhead drum for treatment as a nonpumpable waste. The nonpumpable wastes are cut with solvents and blended for disposal. The solvents used to cut the nonpumpable wastes are solvents received from other generators. The cutting solvents are not analyzed for polychlorinated biphenyls (PCBs) prior to use.

During the processing of the various drums of chemical products discarded by Menasha, thirty-three (33) drums of processed nonpumpable wastes were generated. As part of DLD's outgoing waste analysis requirements, each drum of processed nonpumpable waste is analyzed for PCBs and heat of combustion. As a result of the analyses, fourteen (14) drums were identified as containing PCBs. Since all thirty-three drums of nonpumpable

MEN01281

Drug & Laboratory Disposal, Inc.

wastes were cut with similar solvents, this strongly indicates that the PCB-contamination in only fourteen drums is not a result of PCB-contaminated cutting solvents. These fourteen drums have been disposed of at a PCB-permitted, hazardous waste incinerator.

With the knowledge of PCBs in the nonpumpable waste, DLD personnel sampled Tank #4, the bulk tank used for the storage of the pumpable liquids. At the time of sampling, the tank contained 2,961 gallons of commingled waste. The results of the PCB scan indicated ten parts per million PCBs. A copy of the analytical report is enclosed.

Based on DLD's past knowledge of processing outdated chemical products that have contained PCBs in the chemical formulations, we are not surprised to have found PCB-contamination in the outdated chemical products discarded by Menasha Corporation. We are confident that the PCB-contamination of the nonpumpable waste drums is the result of PCBs in the formulations of the chemical products. For many years, manufacturers of industrial paints, coatings, lubricants, and other chemical products commonly used PCBs in the chemical formulations. This practice was discontinued in the 1970s because of the regulatory changes regarding PCBs.

Thank you for the opportunity to service the disposal needs of the Menasha Corporation in Otsego, Michigan. Drug & Laboratory Disposal, Inc. looks forward to working with Menasha for the environmentally correct disposal of their chemical waste.

Sincerely,

Kevin Jay Berghuis

Kevin Jay Berghuis, CHMM
Hazardous Materials Director

KJB:rk\menasha6.kjb

Enclosure

MEN01282

DRUG AND LAB DISPOSAL

DOCUMENT #35I

I. DLD Invoice No. 410068, dated December 7, 1994, for services performed on October 20, 1994.

MEN01284

Drug & Laboratory Disposal, Inc.

Environmentally Correct
Disposal of all
Chemical Waste

INVOICE

P.O. Box 490
Plainwell, MI 49080
(616) 685-9824

TO: MENASHA CORPORATION
ATTN: ACCOUNTS PAYABLE
P.O. BOX 155
[illegible]

DEC 2 [illegible]

Terms	Reference	Invoice Date	Your Purchase Order #	Invoice #	Pg
NET 30	THREE-PERSON/TWO-VEHICLE JOB	12/07/94	157762	410065	00

Service Date	Description	Quantity/Unit*	Unit Price	Amount
7/20/94	Personnel Time	15.00 Hours	65.00	975.0
	Mileage	18.00 Miles	.75	13.5
	Nonhal. High BTU Solvents	742.00 Charge Units	4.15	3,079.3
	Nonhal. Low BTU Solvents	160.00 Charge Units	5.75	920.0
	Solids	101.00 Charge Units	8.75	883.7
	Nonhal. High BTU Solvents	5.00 55-gal Drums	250.00	1,250.0
	Nonhal. Low BTU Solvents	12.00 55-gal Drums	350.00	4,200.0
	Nonhal. Low BTU Solvents	4.00 30-gal Drums	205.00	820.0
	PCB Screen	3.00 Screen(s)	30.00	90.0
	Destruction of Empty Drums	3.00 Drums	30.00	90.0
	Aerosol Cans	3.00 Cans	5.00	15.0
				12,336.3

17 @ 55
4 @ 50

VENDOR
3/6/11/60

DUE DATE

PAYMENT APPROVAL JM

FEB 28 1995

48168 533-0000

* CHARGE UNITS are liters or kilograms or any portion thereof.

TOTAL $ 12,336.

Please pay from this invoice.
This is the only form we issue.

DRUG AND LAB DISPOSAL

DOCUMENT #35J

J. June 19, 1995, memo from Dave Merkel describing visit to DLD's facility.

MEN01287

Memo

PAPERBOARD DIVISION

MENASHA CORPORATION

"PRIVILEGED AND CONFIDENTIAL ATTORNEY/CLIENT COMMUNICATION"

To: File
From: David Merkel
Date: June 19, 1995
Subject: Trip Report on Visit to Drug and Lab Disposal

On 6/12/95 Keith Kling and myself visited Drug and Lab Disposal in Plainwell, where we met with Kevin Burgheiss to discuss his process as it relates to the recent disposal of some old chemicals from the mill. The purpose of the trip was one of visual clarification for both an in mill meeting with Kevin and several phone conversations in which we were told different things about the disposal process each time.

We were especially interested in the process flow of the disposal system, clarifying whether PCB tests were available on the solvents used to cut drum sludges, and in retaining a report Kevin had promised to write for us concerning their process. Following are the observations and important points from the visit.

1. Kevin showed us the major process flow from the point where chemicals enter the facility to the point where they leave to their final disposition. He described the flow as: Drums of chemicals enter the receiving area and are unloaded. The drums are moved to a first station where they are checked visually. If they look "funny", or are oil, they are screened for PCB's. If they contain PCB's, they are labelled as such and sent out for disposal as PCB waste. If not PCB containing, the liquid fractions are pumped out to a holding tank. The holding tank receives a screening test including PCB's (which he was unable to provide for us immediately, but said he would get. Note: we have asked for this for several weeks). Sludges that remain in the drums are taken to the sludge mixing area, at which point they do not know whose drums are whose. The sludges are cut with solvents, which could be from any number of waste sources, and then mixed. The drums are then tested for PCB's, and disposed of accordingly.

2. We questioned Kevin on how DLD could have known our sludge drums were the ones containing PCB's if they did not label or keep track of them in their process, especially in the sludge mixing area. He fumbled for an answer, then told us they "just knew" because we had many drums. At this point we pointed out to him that this looked difficult, since there were 20 - 30 drums in

random order around the area. He told us that there was no way (since they do not have a tacking system) that he could 100% guarantee all of the drums that tested positive for PCB's were definitely our drums, and only our drums. We asked him if he would be willing to put this in his written report we were expecting, and he said he would.

3. We questioned whether he could guarantee there were not PCB's in the solvents used to cut the sludge, and why they were not checked. He told us that they just knew, and that the solvents were from the type of facility, like colleges and research, that he felt they would not contain PCB's. Even though he had told us twice (in prior conversations) that they could certify the solvents were PCB free, he told us today that he did not say this and could not certify them as PCB free.

4. He explained during the visit that old paints sometimes will contain PCB's. We asked him whether they had tested our old paint drum for PCB's, and he said no. We questioned this and were told they just felt it didn't contain PCB's, so it wasn't tested.

5. Some general comments - Keith and I both feel this operation, in hind sight, is shoddily run, and is not a good future site for any waste disposal. Many things we observed during the visit or have experienced with this last disposal with DLD have shaken any confidence we might have had in their abilities. For example: lack of a tracking system for chemicals as they progress through their system; lack of test results on all drums; lack of easily available data which we continue to request (such as bulk tank test results); lack of PCB or other testing on solvents used to cut sludges; the fact that DLD did not really know with certainty that the PCB containing sludges were Menasha sludges; several operators were wearing respirators while at least two were not; Keith and I had several strong "hits" of VOC's during the visit (while we were outside) which gave us headaches and took away our breath.

cc: Keith Kling
Glen Holcombe - Corporate
Jeff Woolstrum - Honigman, Miller, Schwartz and Cohn

DRUG AND LAB DISPOSAL

DOCUMENT #35K

K. DLD analytical report of a sample taken from Tank #4 on November 8, 1994.

JUN-23-95 FR 3:13 MENASHA CORP FAX NO. 6165522000

1869
11-09-94

DLD ANALYTICAL

MEN01291

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

RECEIVED 11-09-94

ANALYTICAL REPORT

Report number: 1869

Sample Date: 11/08/1994
Date Received: 11/08/1994
Report Date: 11/09/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: Tank 4-90HB
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	11/9	10 ppm

Called DLD Lab 6/20/95
Melvin McCauley 685-9813
He tried to check for specific Aroclor but his backup tape failed him. He said it is always either 1254 or 1260.

DRUG AND LAB DISPOSAL

DOCUMENT #35L

L. Transcript of June 21, 1995, voice-mail message from DLD.

Keith

MEN01294

VOICE MAIL TRANSCRIPT FROM MELVIN MCAULEY
LEFT ON KEITH KLING'S VOICE MAIL AND FORWARDED TO DAVID MERKEL

TIME: 2:10 PM

DATE: 6/21/95

Keith:

Hi Dave. I called Drug and Lab Disposal to get the species of PCB, and I am going to forward the man's comments to you and we can discuss it later.

Melvin:

This is Melvin McAuley with Drug and Lab Disposal. I was unable to locate the information as to which species of arochlor it was. But since we have never found anything except 54 or 60, and most of it 54, that is very likely what it was. Unfortunately, the problem was my tape backup failed me, and I wound up with corrupted file that I wasn't able to recover. If you have any questions, call me at 616-685-9813. Thank you.

re: mevmcal.tm

DRUG AND LAB DISPOSAL

DOCUMENT #35M

M. DLD analytical results.

MENASHA CORPORATION - OTSEGO PLANT
REPORT NUMBERS VERSUS SAMPLE NUMBERS

Report Number	Sample Number
1814 1899	1025a
1815 1855	1025b
1816 1900	1025c
1817 1901	1025d
1819 1856	1025f
1820 1902	1025g
1827 1887	1025n
1831 1888	1025s
1832 1889	1025t
1864 1891	117e
1906 1930	1128a
1907 1931	1128b
1908 1932	1128c
1918 1975	1128m

11-02-94

DLD ANALYTICAL

MEN01298

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT
(REVISED)

Report number: 1814

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025a
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/26	10848.0 Btu/lb
PCBs	10/31	580 ppm

DLD ANALYTICAL

MEN01299

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1899

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID. 1025A (re-do)
Description:

Sample Date: 11/21/1994
Date Received: 11/21/1994
Report Date: 12/07/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/01	<75 Degrees F
Halogens	12/06	0.48 % Chl
Water	12/05	3.5 %
PCBs	12/05	<59 ppm
Arsenic	12/06	<0.47 ppm
Barium	12/06	150 ppm
Cadmium	12/01	1.9 ppm
Chromium	12/05	500 ppm
Copper	12/07	51 ppm
Lead	12/05	73 ppm
Mercury	11/23	3 ppm
Selenium	12/07	<9.2 ppm
Silver	12/02	<0.15 ppm
Zinc	11/30	91 ppm

11-02-94

DLD ANALYTICAL

MEN01300

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT
(REVISED)

Report number: 1815

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID: N/P-1025b
Description:

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/26	9687.8 Btu/lb
PCBs	10/31	1300 ppm

11-91-94

DLD ANALYTICAL

MEN01301

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1855

Sample Date: 10/25/1994
Date Received: 11/02/1994
Report Date: 11/21/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID. N/P-1025B
Description.

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	11/10	<71 Degrees F
Water	11/02	12.1 %
Arsenic	11/15	2800 ppm
Barium	11/19	63 ppm
Cadmium	11/11	13 ppm
Chromium	11/11	6000 ppm
Lead	11/16	65 ppm
Mercury	11/4	<3 ppm
Selenium	11/14	<3.2 ppm
Silver	11/11	<16 ppm

11-02-94

DLD ANALYTICAL

MEN01302

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT
(REVISED)

Report number: 1816

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025c
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/27	12035.9 Btu/lb
PCBs	10/31	900 ppm

DLD ANALYTICAL

MEN01303

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

ANALYTICAL REPORT

Report number: 1900

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID: 1025C (re-do)
Description

Sample Date: 11/21/1994
Date Received: 11/21/1994
Report Date: 12/07/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/01	<75 Degrees F
Halogens	12/06	0.40 % Chl
Water	12/05	5.4 %
PCBs	12/05	345 ppm
Arsenic	12/06	<0.55 ppm
Barium	12/06	190 ppm
Cadmium	12/01	10 ppm
Chromium	12/05	1400 ppm
Copper	12/07	43 ppm
Lead	12/02	87 ppm
Mercury	11/23	3 ppm
Selenium	12/07	<6.9 ppm
Silver	12/02	0.41 ppm
Zinc	11/30	53 ppm

MEN01304

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT
(REVISED)

Report number: 1817

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID: N/P-1025d
Description:

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/27	13673.0 Btu/lb
PCBs	10/31	610 ppm

DLD ANALYTICAL

MEN01305

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number 1901

Sample Date: 11/21/1994
Date Received: 11/21/1994
Report Date: 12/07/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: 1025D (re-do)
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/01	<75 Degrees F
Halogens	12/06	0.21 % Chl
Water	12/05	3.1 %
PCBs	12/05	203 ppm
Arsenic	12/06	<0.80 ppm
Barium	12/06	440 ppm
Cadmium	12/01	30 ppm
Chromium	12/05	790 ppm
Copper	12/07	50 ppm
Lead	12/02	440 ppm
Mercury	11/23	2 ppm
Selenium	12/07	<13 ppm
Silver	12/02	<0.05 ppm
Zinc	11/30	29 ppm

11-02-94

DLD ANALYTICAL

MEN01306

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

RECEIVED
11-03-94

ANALYTICAL REPORT
(REVISED)

Report number 1819

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Client Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention. Patricia Troost
Phone. (616) 685-9824

Sample ID N/P-1025f
Description

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/27	8198.7 Btu/lb
PCBs	10/31	970 ppm

11-21-94

DLD ANALYTICAL

MEN01307

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1856

Sample Date: 10/25/1994
Date Received: 11/02/1994
Report Date: 11/21/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025F
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	11/15	86 Degrees F
Water	11/02	33.8 %
Arsenic	11/14	5.1 ppm
Barium	11/18	3.5 ppm
Cadmium	11/17	0.57 ppm
Chromium	11/11	<8.3 ppm
Lead	11/16	12 ppm
Mercury	11/04	<3 ppm
Selenium	11/14	<2.3 ppm
Silver	11/11	<18 ppm

11-02-94

DLD ANALYTICAL

MEN01308

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

RECEIVED 11-03-94

ANALYTICAL REPORT
(REVISED)

Report number: 1820

Sample Date: 10/25/1994
Date Received: 10/26/1994
Report Date: 11/02/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025g
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	10/27	13942.4 Btu/lb
PCBs	10/31	875 ppm

DLD ANALYTICAL

MEN01309

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1902

Sample Date: 11/21/1994
Date Received: 11/21/1994
Report Date: 12/21/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: 1025G (re-do)
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/08	<74 Degrees F
Halogens	12/06	0.64 % Chl
Water	12/05	31.9 %
PCBs	12/01	58 ppm
Arsenic	12/20	<7.9 ppm
Barium	12/20	3.6 ppm
Cadmium	12/20	0.98 ppm
Chromium	12/20	<0.93 ppm
Copper	11/30	<87 ppm
Lead	12/20	8.1 ppm
Mercury	11/23	2 ppm
Selenium	12/20	<22 ppm
Silver	12/21	73 ppm
Zinc	11/30	<6.3 ppm

11-09-94

DLD ANALYTICAL

MEN01310

P O Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1827

Sample Date: 10/25/1994
Date Received: 10/28/1994
Report Date: 11/09/1994

Client. Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID N/P-1025-N
Description

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	11/02	<455 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01311

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1887

Sample Date: 10/25/1994
Date Received: 11/17/1994
Report Date: 12/07/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025-N
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Water	11/28	24.7 %
Arsenic	12/06	<0.26 ppm
Barium	12/05	<4.1 ppm
Cadmium	12/01	<0.31 ppm
Chromium	12/05	10.8 ppm
Lead	12/02	4.3 ppm
Mercury	11/22	2 ppm
Selenium	12/07	3.0 ppm
Silver	12/02	0.11 ppm

11-03-94

DLD ANALYTICAL

MEN01312

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number. 1831

Client Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID N/P-1025-S
Description

Sample Date: 10/25/1994
Date Received: 10/28/1994
Report Date: 11/03/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	11/02	<488 ppm

(High detection limit due to matrix interference)

Column RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01313

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1888

Sample Date: 10/25/1994
Date Received: 11/17/1994
Report Date: 12/07/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025-S
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Water	11/28	32.8 %
Arsenic	12/06	720 ppm
Barium	12/05	850 ppm
Cadmium	11/29	1000 ppm
Chromium	11/29	420 ppm
Lead	11/30	280 ppm
Mercury	11/22	77 ppm
Selenium	12/07	15 ppm
Silver	12/02	<0.11 ppm

11-03-94

DLD ANALYTICAL

MEN01314

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

ANALYTICAL REPORT

Report number: 1832

Sample Date: 10/25/1994
Date Received: 10/28/1994
Report Date: 11/03/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1025-T
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	11/02	<500 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01315

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1889

Sample Date: 10/25/1994
Date Received: 11/17/1994
Report Date: 12/07/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID. N/P-1025-T
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Water	11/28	24.4 %
Arsenic	12/06	29000 ppm
Barium	12/06	110 ppm
Cadmium	11/29	53 ppm
Chromium	11/29	110 ppm
Lead	11/30	260 ppm
Mercury	11/22	2 ppm
Selenium	12/07	<3.9 ppm
Silver	12/02	1.5 ppm

11-15-94

DLD ANALYTICAL

MEN01316

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1864

Sample Date: 11/07/1994
Date Received: 11/08/1994
Report Date: 11/15/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P - 117E
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	11/15	<2500 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01317

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

COPY

Report number: 1891

Sample Date: 11/07/1994
Date Received: 11/17/1994
Report Date: 12/21/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-117e
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Water	11/28	19.9 %
Arsenic	12/06	<0.34 ppm
Barium	12/06	<5.4 ppm
Cadmium	12/01	<0.41 ppm
Chromium	12/05	3.6 ppm
Lead	12/02	3.0 ppm
Mercury	11/22	1 ppm
Selenium	12/07	<9.0 ppm
Silver	12/21	46 ppm

DLD ANALYTICAL

MEN01318

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

ANALYTICAL REPORT

Report number: 1906

Sample Date: 11/28/1994
Date Received: 11/28/1994
Report Date: 12/06/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1128A
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	12/05	<650 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01319

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

ANALYTICAL REPORT

12-15-94

Report number: 1930

Sample Date: 11/28/1994
Date Received: 12/05/1994
Report Date: 12/15/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1128a
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/08	<75 Degrees F
Heat of combustion	12/06	10956.2 Btu/lb
Halogens	12/06	1.49 % Chl.
Arsenic	12/09	<8.9 ppm
Barium	12/08	<13 ppm
Cadmium	12/09	<0.16 ppm
Chromium	12/08	1.6 ppm
Lead	12/09	3.3 ppm
Mercury	12/06	<1.9 ppm
Selenium	12/07	<18 ppm
Silver	12/08	<3.4 ppm

DLD ANALYTICAL

MEN01320

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1907

Sample Date: 11/28/1994
Date Received: 11/28/1994
Report Date: 12/06/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1128B
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	12/05	<625 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01321

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1931

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID: N/P-1128b
Description:

Sample Date: 11/28/1994
Date Received: 12/05/1994
Report Date: 12/15/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/08	<75 Degrees F
Heat of combustion	12/06	8917.8 Btu/lb
Halogens	12/06	2.26 % Chl
Arsenic	12/09	47 ppm
Barium	12/08	19 ppm
Cadmium	12/09	<0.24 ppm
Chromium	12/08	40 ppm
Lead	12/09	270 ppm
Mercury	12/06	<2.5 ppm
Selenium	12/07	<25 ppm
Silver	12/08	19 ppm

DLD ANALYTICAL

MEN01322

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1908

Sample Date: 11/28/1994
Date Received: 11/28/1994
Report Date: 12/06/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1128C
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	12/05	<795 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0.0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01323

P.O. Box 336
331 Broca Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing In Hazardous Waste

ANALYTICAL REPORT

Report number: 1932

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Sample ID. N/P-1128c
Description:

Sample Date: 11/28/1994
Date Received: 12/05/1994
Report Date: 12/15/1994

Attention: Patricia Troost
Phone: (616) 685-9824

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Flashpoint	12/08	<75 Degrees F
Heat of combustion	12/06	10063.8 Btu/lb
Halogens	12/06	3.17 % Chl
Arsenic	12/09	430 ppm
Barium	12/08	89 ppm
Cadmium	12/09	0.83 ppm
Chromium	12/08	48 ppm
Lead	12/07	210 ppm
Mercury	12/09	63 ppm
Selenium	12/07	<8.8 ppm
Silver	12/08	100 ppm

DLD ANALYTICAL

MEN01324

P O Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9313

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1918

Sample Date: 11/28/1994
Date Received: 11/29/1994
Report Date: 12/19/1994

Client. Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID. N/P-1128M
Description:

Generator Drug & Lab

ANALYSIS	DATE	RESULTS
PCBs	12/16	<540 ppm

(High detection limit due to matrix interference)

Column: RTX-35 Temperature Program: Start 180 degrees
Hold 0 0 minutes
Ramp 4.0 degrees/minute to 280 degrees
Hold 15.0 minutes

DLD ANALYTICAL

MEN01325

P.O. Box 336
331 Broad Street
Plainwell, MI 49080

(616) 685-9813

Professional Environmental Analysis
Specializing in Hazardous Waste

ANALYTICAL REPORT

Report number: 1975

Sample Date: 11/28/1994
Date Received: 12/19/1994
Report Date: 12/30/1994

Client: Drug & Laboratory Disposal
331 Broad Street
Plainwell MI 49080

Attention: Patricia Troost
Phone: (616) 685-9824

Sample ID: N/P-1128M
Description:

Generator: Drug & Lab

ANALYSIS	DATE	RESULTS
Heat of combustion	12/19	17426.1 Btu/lb
Water	12/19	0.4 %
Arsenic	12/29	<500 ppm
Barium	12/29	<100 ppm
Cadmium	12/29	<25 ppm
Chromium	12/29	80 ppm
Lead	12/29	340 ppm
Mercury	12/21	<1.9 ppm
Selenium	12/29	<500 ppm
Silver	12/21	40 ppm

DRUG AND LAB DISPOSAL

DOCUMENT #35O

O. Western Michigan analytical results.

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland Michigan 49424-9263
Phone: 616-399-6070 FAX: 616-399-6185

MEN01328

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Len Myers

DATE: February 13, 1995

ANALYSIS OF: Waste Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on January 24, 1995.

Sample ID: 1025 A Lab ID: 9501198-01 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	01/31/95	DGK		58
PCB-1221	BDL	mg/kg as recd	01/31/95	DGK		1.3
PCB-1232	BDL	mg/kg as recd	01/31/95	DGK		58
PCB-1242	BDL	mg/kg as recd	01/31/95	DGK		58
PCB-1248	BDL	mg/kg as recd	01/31/95	DGK		58
PCB-1254	440	mg/kg as recd	01/31/95	DGK		19
PCB-1260	BDL	mg/kg as recd	01/31/95	DGK		87
Total PCBs	440	mg/kg as recd	01/31/95	DGK		200
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1025 B Lab ID: 9501198-02 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/01/95	DGK		7.2
PCB-1221	BDL	mg/kg as recd	02/01/95	DGK		13
PCB-1232	BDL	mg/kg as recd	02/01/95	DGK		7.2
PCB-1242	BDL	mg/kg as recd	02/01/95	DGK		7.2
PCB-1248	BDL	mg/kg as recd	02/01/95	DGK		7.2
PCB-1254	1,600	mg/kg as recd	02/01/95	DGK		14
PCB-1260	BDL	mg/kg as recd	02/01/95	DGK		5.1
Total PCBs	1,600	mg/kg as recd	02/01/95	DGK		40
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

BDL = Below Detection Limit
MDL = Method Detection Limit

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Sample ID: 1025 C Lab ID: 9501198-03 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/01/95	DGK		2.6
PCB-1221	BDL	mg/kg as recd	02/01/95	DGK		8.6
PCB-1232	BDL	mg/kg as recd	02/01/95	DGK		2.6
PCB-1242	BDL	mg/kg as recd	02/01/95	DGK		2.6
PCB-1248	BDL	mg/kg as recd	02/01/95	DGK		2.6
PCB-1254	1,400	mg/kg as recd	02/01/95	DGK		2.9
PCB-1260	BDL	mg/kg as recd	02/01/95	DGK		1.8
Total PCBs	1,400	mg/kg as recd	02/01/95	DGK		16
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1025 D Lab ID: 9501198-04 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/28/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/30/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/09/95	DGK		4.6
PCB-1221	BDL	mg/kg as recd	02/09/95	DGK		7.6
PCB-1232	BDL	mg/kg as recd	02/09/95	DGK		4.6
PCB-1242	BDL	mg/kg as recd	02/09/95	DGK		4.6
PCB-1248	BDL	mg/kg as recd	02/09/95	DGK		4.6
PCB-1254	170	mg/kg as recd	02/09/95	DGK		5.1
PCB-1260	BDL	mg/kg as recd	02/09/95	DGK		3.7
Total PCBs	170	mg/kg as recd	02/09/95	DGK		21
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/28/95	date completed		LD	EPA 3660	

Sample ID: 1025 F Lab ID: 9501198-05 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/01/95	DGK		89
PCB-1221	BDL	mg/kg as recd	02/01/95	DGK		160
PCB-1232	BDL	mg/kg as recd	02/01/95	DGK		89
PCB-1242	BDL	mg/kg as recd	02/01/95	DGK		89
PCB-1248	BDL	mg/kg as recd	02/01/95	DGK		89
PCB-1254	2,100	mg/kg as recd	02/01/95	DGK		11
PCB-1260	BDL	mg/kg as recd	02/01/95	DGK		92
Total PCBs	2,100	mg/kg as recd	02/01/95	DGK		360
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

BDL = Below Detection Limit
MDL = Method Detection Limit

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MEN01330

Sample ID: 1025 G Lab ID: 9501198-06 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	01/31/95	DGK		6.2
PCB-1221	BDL	mg/kg as recd	01/31/95	DGK		9.6
PCB-1232	BDL	mg/kg as recd	01/31/95	DGK		6.2
PCB-1242	BDL	mg/kg as recd	01/31/95	DGK		6.2
PCB-1248	BDL	mg/kg as recd	01/31/95	DGK		6.2
PCB-1254	1,100	mg/kg as recd	01/31/95	DGK		6.7
PCB-1260	BDL	mg/kg as recd	01/31/95	DGK		5.5
Total PCBs	1,100	mg/kg as recd	01/31/95	DGK		28
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1025 N Lab ID: 9501198-07 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/02/95	DGK		1.5
PCB-1221	BDL	mg/kg as recd	02/02/95	DGK		0.86
PCB-1232	BDL	mg/kg as recd	02/02/95	DGK		1.5
PCB-1242	BDL	mg/kg as recd	02/02/95	DGK		1.5
PCB-1248	BDL	mg/kg as recd	02/02/95	DGK		1.5
PCB-1254	BDL	mg/kg as recd	02/02/95	DGK		1.5
PCB-1260	BDL	mg/kg as recd	02/02/95	DGK		0.44
Total PCBs	BDL	mg/kg as recd	02/02/95	DGK		2.8
Prep by Sonication	01/27/95	prep. date.		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD.	EPA 3580	

Sample ID: 1025 S Lab ID: 9501198-08 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/05/95	DGK		3.7
PCB-1221	BDL	mg/kg as recd	02/05/95	DGK		29
PCB-1232	BDL	mg/kg as recd	02/05/95	DGK		3.7
PCB-1242	BDL	mg/kg as recd	02/05/95	DGK		3.7
PCB-1248	BDL	mg/kg as recd	02/05/95	DGK		3.7
PCB-1254	BDL	mg/kg as recd	02/05/95	DGK		4.6
PCB-1260	BDL	mg/kg as recd	02/05/95	DGK		5.9
Total PCBs	BDL	mg/kg as recd	02/05/95	DGK		43
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

BDL = Below Detection Limit
MDL = Method Detection Limit

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Sample ID: 1025 T Lab ID: 9501198-09 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/05/95	DGK		7.7
PCB-1221	BDL	mg/kg as recd	02/05/95	DGK		0.58
PCB-1232	BDL	mg/kg as recd	02/05/95	DGK		7.7
PCB-1242	BDL	mg/kg as recd	02/05/95	DGK		7.7
PCB-1248	BDL	mg/kg as recd	02/05/95	DGK		7.7
PCB-1254	BDL	mg/kg as recd	02/05/95	DGK		17
PCB-1260	BDL	mg/kg as recd	02/05/95	DGK		13
Total PCBs	BDL	mg/kg as recd	02/05/95	DGK		39
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 117 E Lab ID: 9501198-10 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/02/95	DGK		110
PCB-1221	BDL	mg/kg as recd	02/02/95	DGK		30
PCB-1232	BDL	mg/kg as recd	02/02/95	DGK		110
PCB-1242	BDL	mg/kg as recd	02/02/95	DGK		110
PCB-1248	BDL	mg/kg as recd	02/02/95	DGK		110
B-1254	BDL	mg/kg as recd	02/02/95	DGK		7,600
B-1260	BDL	mg/kg as recd	02/02/95	DGK		980
Total PCBs	BDL	mg/kg as recd	02/02/95	DGK		8,900
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1128 A Lab ID: 9501198-11 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/05/95	DGK		58
PCB-1221	BDL	mg/kg as recd	02/05/95	DGK		13
PCB-1232	BDL	mg/kg as recd	02/05/95	DGK		58
PCB-1242	BDL	mg/kg as recd	02/05/95	DGK		58
PCB-1248	BDL	mg/kg as recd	02/05/95	DGK		58
PCB-1254	BDL	mg/kg as recd	02/05/95	DGK		270
PCB-1260	BDL	mg/kg as recd	02/05/95	DGK		44
Total PCBs	BDL	mg/kg as recd	02/05/95	DGK		390
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Note: Limits of detection for sample -10 are elevated due to high level of chlordane (confirmed by GC/MS). The limits of detection for sample -11 are also elevated due to presence of second layer, unidentifiable peaks.

BDL = Below Detection Limit
MDL = Method Detection Limit

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Sample ID: 1128 B Lab ID: 9501198-12 Collected: 01/24/95

T	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/01/95	DGK		44
PCB-1221	BDL	mg/kg as recd	02/01/95	DGK		42
PCB-1232	BDL	mg/kg as recd	02/01/95	DGK		44
PCB-1242	BDL	mg/kg as recd	02/01/95	DGK		44
PCB-1248	BDL	mg/kg as recd	02/01/95	DGK		44
PCB-1254	BDL	mg/kg as recd	02/01/95	DGK		600
PCB-1260	BDL	mg/kg as recd	02/01/95	DGK		75
Total PCBs	BDL	mg/kg as recd	02/01/95	DGK		760
Prep by Sonication	01/27/95	prep. date		LD	EPA 3550	
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1128 C Lab ID: 9501198-13 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/01/95	DGK		7,600
PCB-1221	BDL	mg/kg as recd	02/01/95	DGK		360
PCB-1232	BDL	mg/kg as recd	02/01/95	DGK		7,600
PCB-1242	BDL	mg/kg as recd	02/01/95	DGK		7,600
PCB-1248	BDL	mg/kg as recd	02/01/95	DGK		7,600
PCB-1254	BDL	mg/kg as recd	02/01/95	DGK		8,900
PCB-1260	BDL	mg/kg as recd	02/01/95	DGK		2,200
Total PCBs	BDL	mg/kg as recd	02/01/95	DGK		20,000
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Sample ID: 1128 H Lab ID: 9501198-14 Collected: 01/24/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Acid/Permanganate Cleanup	01/26/95	date completed		LD	EPA 3665	
Florisil Cleanup	01/28/95	date completed		LD	EPA 3620	
Polychlorinated Biphenyls					EPA 8080	
PCB-1016	BDL	mg/kg as recd	02/02/95	DGK		0.19
PCB-1221	BDL	mg/kg as recd	02/02/95	DGK		1.1
PCB-1232	BDL	mg/kg as recd	02/02/95	DGK		0.19
PCB-1242	BDL	mg/kg as recd	02/02/95	DGK		0.19
PCB-1248	BDL	mg/kg as recd	02/02/95	DGK		0.19
PCB-1254	BDL	mg/kg as recd	02/02/95	DGK		0.51
PCB-1260	BDL	mg/kg as recd	02/02/95	DGK		0.16
Total PCBs	BDL	mg/kg as recd	02/02/95	DGK		2.0
Sulfur Cleanup	01/26/95	date completed		LD	EPA 3660	
Waste Dilution	01/26/95	prep. date		LD	EPA 3580	

Note: Limits of detection for sample -12 are elevated due to presence of several high level unidentifiable peaks. The limits of detection for sample -13 are also elevated due to high presence of chlordane and other pesticides (DDD, DDE, and DDT) this was confirmed by GC/MS.

BDL = Below Detection Limit
MDL = Method Detection Limit

Printed on Recycled Paper

MEN01333

DRUG AND LAB DISPOSAL

DOCUMENT #35P

ANN ARBOR TECHNICAL SERVICES, INC.

August 1, 1995

Mr. Joseph M. Polito, Esq.
Honigman, Miller, Schwartz & Cohn
First National Building, Suite 2290
600 N. Woodward Avenue
Detroit, MI 48226

Re: Technical Review: Menasha Corporation--Waste Shipped to Drug and Laboratory Disposal, Inc., October 20, 1994

Dear Mr. Polito:

On October 20, 1994, Menasha Corporation arranged for Drug and Laboratory Disposal, Inc. (DLD) of Plainwell, Michigan, to transport and dispose of certain used and unused commercial products from Menasha's Otsego, Michigan facility. You have asked us to review certain documents concerning this operation because some of the disposed products are alleged to have contained polychlorinated biphenyls (PCB). Copies of the documents that have been provided to us for our review include notes and correspondence from both companies, State of Michigan Department of Natural Resources (MDNR) waste manifests, analytical data reports, and purchasing documents.

According to four MDNR waste manifests dated October 20, 1995, 44 drums were shipped from Menasha to DLD. Drum and waste inventories were prepared by Menasha and DLD. The third page of DLD's inventory lists products that were contained in 38 drums ranging in size from 30 to 55 gallons plus one 5-gallon bucket. According to Menasha staff, the October 20, 1994 shipment consisted of these 38 drums, plus 6 overpacked drums. The overpacks were used to contain materials in small containers, presumably including the 5-gallon bucket. Menasha staff have stated that the overpacks are not alleged to be the source of PCB, and therefore are not of further concern.

Based on the inventories prepared by Menasha and DLD, Menasha has indicated that it has identified the contents of 32 of the 38 drums that were not overpacks. Further, Menasha has stated that it has verified that these 32 drums did not contain PCB, based on letters from the manufacturers of the products, material safety data sheets, and PCB screens performed by DLD on the three drums of oil included in the shipment. Therefore, according to Menasha, only 6 drums in the October 20, 1994 shipment contained unknown materials.

The comments which follow address your request that we focus our review on the waste handling, record keeping and analytical chemistry aspects of this matter, and render an opinion on the likelihood that the Menasha wastes actually contained the alleged PCB.

Consultants in Chemistry & Environmental Science
290 South Wagner Road, Ann Arbor, Michigan 48103 Tel 313/995-0995 Fax 313/995-3731

DLD's WASTE HANDLING PRACTICES & RECORD KEEPING

- According to Kevin Jay Berghuis of DLD (June 19, 1995 letter to Keith Kling, Menasha, page 2), "All 55-gallon drums of chemical product are processed individually. The Hazardous Waste Chemists obtain a sample of the drum to verify its contents and to determine a proper disposal method. All pumpable liquids are commingled into bulk storage tanks for disposal. Any nonpumpable waste found in a drum is transferred to a 55-gallon open head drum for treatment as a nonpumpable waste. The nonpumpable wastes are cut with solvents and blended for disposal. The solvents used to cut the nonpumpable wastes are solvents received from other generators. The cutting solvents are not analyzed for polychlorinated biphenyls (PCBs) prior to use" (emphasis added).

- While DLD's Berghuis indicates that "all 55-gallon drums of chemical product are processed individually", clearly this statement is not entirely correct. The DLD process involves commingling all pumpable liquids into bulk storage tanks for disposal. Nonpumpable wastes are transferred to other drums and blended with solvents received from other generators. To illustrate this point, the total volume of waste in bulk storage Tank #4, into which Menasha's pumpable waste was reportedly transferred, was 2,961 gallons. This is essentially equivalent to fifty-four 55-gallons drums. The entire October 20, 1995 shipment from Menasha to DLD consisted of only 44 total drums, and this included pumpable, nonpumpable, and overpacked wastes. Therefore, the Menasha pumpable waste must have been mixed with other liquid wastes to account for this total volume.

- Because the "cutting solvents" DLD uses to solubilize/suspend the nonpumpable wastes are received from other waste generators, and are not analyzed for PCBs prior to use by DLD, it is impossible to know from the information provided by DLD whether these solvents did, or did not, contain PCB at the time they were used by DLD to "cut" the nonpumpable wastes. DLD's Berghuis further states in his June 19, 1995 letter (pages 2-3) that "Since all thirty-three drums of non-pumpable wastes were cut with similar solvents, this strongly indicates that the PCB contamination in only fourteen drums is not a result of PCB contaminated cutting solvents." Although Berghuis does not define the term "similar", the common meaning of that term is "to have characteristics in common". In describing the cutting solvents as "similar", it is possible that DLD mixed Menasha's waste with two or more solvents that had chemical or physical properties in common, but which came from two or more waste shipments or generators. Thus, unless DLD mixed all of Menasha's nonpumpable waste with one, specific solvent, the fact that some of the processed drums contained PCB and others did not, could just as well indicate that one or more of the "similar" solvents contained PCB.

- Based on the information provided regarding DLD's procedure for screening incoming waste, the processed samples which allegedly contained PCB cannot be reliably and specifically attributed to Menasha's wastes. Examples of deficiencies in DLD's screening procedures include:

  (1) According to Menasha staff, DLD reportedly screens incoming waste for PCB if it has an "oil or grease" appearance. This observation is supported by the fact that Menasha was invoiced for three initial PCB screens (DLD Invoice #410068) on the October 20 shipment for apparently only the three oil drums, out of the 38 drums and 6 over-packs involved. Analytical screening for PCB solely on the basis of appearance is not a competent protocol, and could result in PCB-containing wastes going undetected before they are commingled in the next stages of waste processing. If PCB has not been detected and identified during the initial screening, and is subsequently mixed with other wastes, it will be impossible to attribute them to a specific generator if adequate tracking procedures are not in place.

  (2) Menasha staff also have indicated that DLD reportedly does not retain negative test results for PCB screening analyses that it performs. This observation is supported by the fact that no initial PCB screening results have been provided by DLD, even though Menasha was invoiced for three such scans and requested these data. Retention of analytical records is recommended by USEPA in the agency's "Good Laboratory Practice Guidelines", in order to provide an audit trail for the resolution of uncertainties and/or disputes concerning test results. Without such an audit trail, decisions concerning disposal options, and costs cannot be validated.

  (3) We have reviewed the April 24, 1985 DLD Waste and Analysis Plan (WAP) wherein DLD states, "No waste material will be accepted for treatment, storage, or disposal unless a detailed chemical analysis or a waste characterization of a representative sample is available in Drug and Laboratory files." Menasha's October 20, 1994 shipment of 9270 lbs. of waste to DLD qualifies them as a large volume generator, according to the WAP (>1000 Kg. per month). The WAP states that wastes received from large

generators will be chemically characterized and a "Generator Waste Analysis Form" will be used to document this characterization. According to DLD's WAP, the waste characterization includes an analysis using the 8000 and 8100 series of test methods of USEPA, SW-846, 2nd Edition, Test Methods for Evaluating Solid Waste. Such an analysis would have included PCB (US EPA Method 8080).

From the information provided by Menasha and DLD, it appears DLD did not comply with the WAP, as regards the October 20, 1994 shipment of waste from Menasha. According to Menasha staff, DLD did not request that a Generator Waste Analysis Form be completed by Menasha, nor did DLD request waste characterization analyses. To our knowledge, DLD did not perform the waste characterization analyses described in the WAP on Menasha wastes, because they have not supplied the results of such testing though such results have been specifically requested by Menasha.

- Menasha staff have reported that unlike most hazardous waste disposal facilities, there is no tracking of individual wastes once they enter the DLD facility. Because both pumpable and nonpumpable waste types are commingled throughout the process, and prior to characterization for PCB (pumpables are mixed in bulk tanks; nonpumpables are cut with third party generator solvents, and apparently commingled in 55-gallon open top drums). Accordingly, the process of matching up outgoing, processed wastes (for example, a batch contaminated with PCB) with incoming generator wastes would be virtually impossible.

DLD's SAMPLE COLLECTION & ANALYSIS

- DLD drum sampling procedures are not detailed, nor are the drum sample handling procedures. Without a detailed description of these procedures, the DLD analytical reports provided in the package cannot be validated and should not be taken at face value.

- The DLD analytical reports provided in the package of materials do not reference any methods or procedures used to generate the data. The PCB data reported in them are not Aroclor-specific. Further, the package does not contain laboratory Standard Operating Procedures, which are required under USEPA Good Laboratory Practices guidelines. It is impossible to determine the validity of the test data without knowing the procedures used to generate them. Key information required to validate the DLD data include:

  - Raw Data and Chromatograms
  - Raw Data Calculations
  - Confirmational Analyses, Including Any GC/MS Results
  - QA/QC Data, Including Blanks, Replicates, Matrix Spikes and Calibration Data
  - Daily Instrument Logs

- DLD's Berghuis indicates in his June 19, 1995 letter (page 2) that "As a result of the analyses, fourteen (14) drums were identified as containing PCBs". However, the analytical data supplied to us do not substantiate this conclusion. The DLD data package contained analytical data on 14 discrete samples, utilizing DLD sample identification numbers. This package was apparently supplied in response to a request by Menasha for back-up analytical data supporting the disposal of 14 PCB-containing drums. In this package DLD also provided four "re-do", and apparently replicate, sample data reports. Assuming that all the test data presented in the package are valid, the data from DLD show only six (6) drums as having positive results for PCB. The DLD analytical results for these six drums are as follows:

SAMPLE ID	DLD-INITIAL	DLD-REDO	Relative Percent Difference (RPD)
1025-D	610 ppm	203 ppm	50%
1025-A	580 ppm	<59 ppm	50%
1025-G	875 ppm	58 ppm	88%
1025-C	900 ppm	345 ppm	45%
1025-B	1,300 ppm	-	-
1025-F	970 ppm	-	-

Clarification is needed on how the figure of 14 PCB-containing drums was derived. Based on the information currently available to us, including confirmational analysis conducted by Western Michigan Environmental on behalf of Menasha, it appears that only six drums exhibited detectable levels of PCB, and that DLD has apparently misstated or misinterpreted the data on the remaining 8 drums.

- The PCB analytical data provided by DLD exhibit poor precision (RPD's > 30%). Data quality of this type can be indicative of nonrepresentative sample collection and handling procedures, or an out-of-control laboratory analysis, or both.

- The 10 ppm PCB result reported by DLD for Tank #4, the tank where Menasha's pumpable wastes were allegedly mixed with other liquids, was not Aroclor specific and, like the drum data discussed above, did not reference any methods or standard operating procedures. The procedures used to collect the tank sample, and the supporting QA/QC data for it are not available It is, therefore, impossible to determine the validity of this result.

- During a meeting with Menasha staff on June 12, 1995, DLD's Berghuis reportedly indicated DLD could "just know" which drums were Menasha's because Menasha "had so many". The October 20, 1994, Menasha shipment to DLD consisted of 44 drums (total weight, 9270 lbs.). According to an analysis of waste manifest records provided to us, DLD received an additional approximately 12,600 lbs. of waste from other sources during the three days preceding the Menasha shipment (October 17 - 19). DLD further received an additional approximately 12,200 lbs. of wastes from other sources during the four days following Menasha's delivery (October 21 - 25). Therefore, during the week that Menasha shipped its waste, DLD took in almost 34,100 lbs of wastes which may have been commingled with Menasha's wastes. According to DLD's analytical reports, the 14 drums of processed waste allegedly containing PCB were sampled on October 25, 1994. Given the amount of other waste accepted and processed by DLD, the likelihood of commingling of different generator's wastes, and the lack of a rigorous waste tracking system, it would be virtually impossible to know which drums contained Menasha's processed waste five days after it arrived.

CONCLUSIONS

- The apparent lack of waste tracking procedures at DLD precludes attributing PCB contamination of the involved DLD wastes to Menasha, or to another single generator or waste shipment.

- The analytical data provided by DLD to support the disposal of 14 drums is suspect. The four sample replicates exhibited poor precision (RPD > 30%), and the data from both DLD and Western Michigan Environmental indicate that only six drums of DLD processed waste material were contaminated with PCB, rather than the fourteen drums which DLD claims.

- DLD apparently did not use standard analytical methods in their screening of drum contents, and they supplied no supporting documentation to validate their measurements, so the DLD screening data must be considered suspect.

- The DLD position that PCB contaminants in their waste streams originated in the Menasha waste shipment cannot be demonstrated from the facts they have presented concerning the handling, tracking, sampling and analysis of wastes at the facility

I trust this evaluation addresses your needs If there is anything further you need from us in the interim, please contact Mary Bennett, Rick Andrew or me at your convenience

Very truly yours,

ANN ARBOR TECHNICAL SERVICES, INC

Philip B Simon /MDB

Philip B Simon
President

PBS/lmh

cc Mr Glenn D Holcombe, Menasha Corporation
Mr John Bonham, Menasha Corporation

DRUG AND LAB DISPOSAL

DOCUMENT #35Q

Q. DLD Waste Analysis Plan

DRUG LABORATORY DISPOSAL WASTE ANAL .S PLAN

[this document also supersedes Part B (Waste Analysis Plan) of Section IV (Disposal Operations Plan) of Act 64 Operating License Application]

April 24, 1985

All waste shipments received will be physically examined by Drug & Laboratory personnel experienced in the handling of hazardous waste. The purpose of this inspection is to ensure that the hazardous waste manifest accurately represents the waste received.

No waste material will be accepted for treatment, storage, or disposal unless a detailed chemical analysis or a waste characterization of a representative sample is available in Drug & Laboratory files, or, in the case of a commercial product, the original manufacturer's label is present on the container. The parameters used for chemical analysis include those listed on the "Generator Waste Analysis Form", and at a minimum will include information which must be known to treat, store, or dispose of waste in accordance with accepted safety practices.

In the case of small volume generators, that is Drug & Laboratory clients which generate less than 1,000 kilograms per month, the following waste analysis plan will apply. The Generator Waste Analysis Form will be filled out by the generator or the certification on the back of the form will be used. The reason for using the Generator Waste Analysis Form is that these generators generate waste which is still in the manufacturer's identified containers, or the waste stream is small and can be attested to by a person familiar with the process generating the waste. This identification provides sufficient information for the proper treatment, storage, and disposal of this waste.

The waste received from large volume generators, that is Drug & Laboratory clients generating more than 1,000 kilograms per month, will be analyzed for the following parameters:

1. Heavy Metals, Cyanides, Sulfides

   The reason for this test is based on the disposal process carried out by Drug & Laboratory Disposal, since all waste is eventually transported elsewhere for ultimate disposal and heavy metals in plating wastes are sometimes complexed with cyanide. This testing is necessary to prevent improper disposal. Testing methods used will be those specified in Test Methods For Evaluating Solid Waste, government document #2W-846, 2nd edition, U.S. Environmental Protection Agency. Testing methods used are the 7000 and 9000 series of methods.

2. Flash Point, BTU

   Flash point and BTU content become essential information since some waste is solidified before final disposal and the presence of BTU's or low flash constituents make ultimate disposal by landfill environmentally unsound. Testing methods will consist of the procedure listed in Section 2.1.1 of Test Methods For Evaluating Solid Waste.

3. Organic Liquids & Dissolved Constituents

   The majority of waste received by Drug & Laboratory Disposal is finally disposed of by incineration. Since organics are best disposed of by incineration, identification of major constituents is necessary. Testing methods will include the 8000 and 8100 series of methods as listed in Test Methods For Evaluating Solid Waste.

Sampling of these wastes will be according to the criteria set forth in Samplers & Sampling Procedures for Hazardous Waste Streams, government document #PB80-135353, U.S. Department of Commerce. Fifty-five-gallon drums are sampled using the Coliwasa diagramed on page 6, figure 1. These criteria will apply to all present and future customers and analytical results obtained will become part of the operating record which is available to MIDNR personnel during regular business hours.

Additionally, Drug & Laboratory Disposal will do the following:

a. The liquid portion of each shipment of waste exceeding fifty-five gallons which is to be solidified will be tested for flash point.

b. The liquid portion of each waste received that is EP toxic or that is listed under EPA waste codes F006-F012 which exceeds five gallons in quantity and that will be blended, solidified, or otherwise treated will be tested for cyanide content.

c. A test for flash point (or BTU content) and chlorine content, either before or immediately after blending in a tank, will be completed on each shipment of waste solvent which contains a constituent(s) listed under EPA waste codes F001-F005, exceeds fifty-five gallons in volume, and is to be blended in Drug & Laboratory Disposal storage tanks.

The final procedure for insuring that waste is correctly disposed of involves analysis of bulk shipments of waste prior to shipment off site. This analysis will consist of gas chromotography (8200 series methods), atomic absorption, spectrographic methods for heavy metals (7000 series), and ignitability/BTU testing as specified in 2.1.1 of Testing Methods For Evaluating Solid Waste. Based on the analytical information obtained prior to each bulk shipment, the parameters used in the ground water monitoring program will be amended to include any chemical entity which exceeds 7% of the gross volume of any two consecutive shipments.

TEST RESULTS ON WASTE WATER SLUDGE

DOCUMENT #36

REPORT NUMBER

E91-00-529

ACCOUNT NUMBER

59008

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 219-483-4759

SEND TO:

MENASHA CORPORATION
PO BOX 155
OTSEGO MI 49078

RE:

PO # 491958

DATE: 08/07/91
TYPE OF SAMPLE: Sludge

SAMPLE ID: Sludge
LAB NUMBER: E-1555

REPORT OF ANALYSIS

ANALYSIS	UNIT	AS RECEIVED BASIS	DRY BASIS
Moisture	%	95.6	0.0
Total Solids	%	4.4	100.0
Dissolved Solids	%	0.272	
Volatile Solids	(% of Total Solids)		70.54
Total Nitrogen	%	0.098	2.23
Ammonium Nitrogen	%	0.003	0.068
Nitrate Nitrogen	%	0.002	0.045
Sulfur	%	0.023	0.52
Phosphorus	%	0.012	0.27
Potassium	%	0.017	0.39
Magnesium	%	0.024	0.55
Calcium	%	0.280	6.36
Sodium	%	0.131	2.98
Iron	ppm	71.5	1620
Manganese	ppm	39.7	902
Copper	ppm	2.8	63.6
Zinc	ppm	6.6	150
Lead	ppm	0.37	8.4
Cadmium	ppm	0.08	1.8
Nickel	ppm	0.50	11.4
Chromium	ppm	0.58	13.2
Boron	ppm	7.2	164
Nitrite-Nitrogen	ppm	2.4	54.5

MEN01347

A & L GREAT LAKES LABORATORIES, INC.
3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 219-483-4759

REPORT OF ANALYSIS

SEND TO
Menasha Corp
PO Box 155
Otsego MI 49078

RE
PO# 491958

Report Number:	F92279-510
Lab Number:	83390
Sample ID:	Sludge

Date Sampled:	09/30/92
Date Received:	10/01/92
Date Reported:	10/16/92
Page:	1

Parameter	Wet Basis		Dry Basis	
	Result	Units	Result	Units
Total Nitrogen (N)	880	mg/kg	2.10	%
Ammonium Nitrogen (NH4-N)	4	mg/kg	0.095	%
Nitrate Nitrogen (NO3-N)	<5	mg/kg	<0.01	%
Phosphorus (P)	157	mg/kg	0.374	%
Potassium (K)	115	mg/kg	0.274	%
Lead (Pb)	1.1	mg/kg	26	mg/kg
Zinc (Zn)	6.7	mg/kg	160	mg/kg
Nickel (Ni)	0.52	mg/kg	12	mg/kg
Copper (Cu)	3.1	mg/kg	74	mg/kg
Cadmium (Cd)	0.07	mg/kg	1.7	mg/kg
Solids	4.2	%	--	--
Magnesium (Mg)	176	mg/kg	4190	mg/kg
Sodium (Na)	508	mg/kg	1.21	%
Calcium (Ca)	1610	mg/kg	3.83	%
Sulfur (S)	229	mg/kg	5450	mg/kg
Manganese (Mn)	22.5	mg/kg	536	mg/kg
Iron (Fe)	100	mg/kg	2380	mg/kg
Chormium (Cr)	0.93	mg/kg	22	mg/kg
Boron (B)	5.6	mg/kg	130	mg/kg
Total Dissolved Solids	1090	mg/kg	--	--
Volatile Solids	--	--	81.6	%
Nitrogen, Nitrite (as N)	<0.01	mg/kg	<0.2	mg/kg
Available Nitrogen (IDEM)	--	--	9.9	lbs/ton

MEN01349

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 219-483-4759

REPORT OF ANALYSIS

SEND TO
Menasha Corporation
PO Box 155
Otsego, MI 49078

RE
PO # 491958

Report Number:	F93029-512
Lab Number:	84405
Sample ID:	Sludge

Date Sampled:	01/26/93
Date Received:	01/27/93
Date Reported:	02/09/93
Page:	1

Parameter	Wet Basis		Dry Basis	
	Result	Units	Result	Units
Total Nitrogen (N)	1060	mg/kg	1.71	%
Ammonium Nitrogen (NH4-N)	28	mg/kg	0.045	%
Nitrate Nitrogen (NO3-N)	6	mg/kg	0.010	%
Phosphorus (P)	196	mg/kg	0.316	%
Potassium (K)	149	mg/kg	0.240	%
Lead (Pb)	1.1	mg/kg	18	mg/kg
Zinc (Zn)	7.6	mg/kg	120	mg/kg
Nickel (Ni)	0.51	mg/kg	8.2	mg/kg
Copper (Cu)	3.4	mg/kg	55	mg/kg
Cadmium (Cd)	0.06	mg/kg	1.0	mg/kg
Solids	6.2	%	--	--
Magnesium (Mg)	178	mg/kg	2870	mg/kg
Sodium (Na)	571	mg/kg	9210	mg/kg
Calcium (Ca)	1730	mg/kg	2.79	%
Sulfur (S)	236	mg/kg	3810	mg/kg
Manganese (Mn)	23.0	mg/kg	371	mg/kg
Iron (Fe)	99.2	mg/kg	1600	mg/kg
Chromium (Cr)	1.0	mg/kg	16	mg/kg
Boron (B)	6.1	mg/kg	98	mg/kg
Molybdenum (Mo)	0.20	mg/kg	3.2	mg/kg
Arsenic (As)	0.06	mg/kg	1.0	mg/kg
Selenium (Se)	<0.02	mg/kg	<0.3	mg/kg
Mercury (Hg)	0.03	mg/kg	0.48	mg/kg
Solids, Total Dissolved (est.)	2000	mg/l	--	--
Solids, Volatile	--	--	84.7	%
Chloride (Cl)	790	mg/kg	1.27	%
Nitrogen, Nitrite (as N)	<0.01	mg/kg	<0.16	mg/kg
Available Nitrogen (IDEM)	--	--	7.7	lbs/ton

A & L GREAT LAKES LABORATORIES, INC.
3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 219-483-4759

BIOSOLIDS ANALYSIS

SEND TO
Menasha Corp
PO Box 155
Otsego MI 49078-0155

RE
PO# 491958

Report Number:	F94028-505
Lab Number:	88517
Sample ID:	Sludge

Date Sampled:	01/25/94
Date Received	01/28/94
Date Reported	02/09/94
Page:	1

Parameter	Wet Basis		Dry Basis	
	Result	Units	Result	Units
Total Nitrogen (N)	820	mg/kg	1.49	%
Ammonium Nitrogen (NH4-N)	70	mg/kg	0.13	%
Nitrate Nitrogen (NO3-N)	5	mg/kg	0.01	%
Phosphorus (P)	106	mg/kg	0.19	%
Potassium (K)	95	mg/kg	0.17	%
Lead (Pb)	0.55	mg/kg	10	mg/kg
Zinc (Zn)	7.8	mg/kg	142	mg/kg
Nickel (Ni)	0.28	mg/kg	5.1	mg/kg
Copper (Cu)	3.5	mg/kg	64	mg/kg
Cadmium (Cd)	0.14	mg/kg	2.5	mg/kg
Solids	5.5	%	--	--
Arsenic (As)	0.03	mg/kg	0.55	mg/kg
Chromium (Cr)	0.94	mg/kg	17	mg/kg
Mercury (Hg)	<0.02	mg/kg	<0.4	mg/kg
Molybdenum (Mo)	0.13	mg/kg	2.4	mg/kg
Selenium (Se)	<0.02	mg/kg	<0.4	mg/kg
Calcium (Ca)	1670	mg/kg	3.04	%
Magnesium (Mg)	159	mg/kg	2890	mg/kg
Sodium (Na)	668	mg/kg	1.21	%
Chloride (Cl)	1030	mg/kg	1.87	%
Sulfur (S)	169	mg/kg	3070	mg/kg
Manganese (Mn)	15.9	mg/kg	289	mg/kg
Iron (Fe)	93	mg/kg	1690	mg/kg
Boron (B)	2.3	mg/kg	42	mg/kg
Solids, Total Dissolved	3130	mg/l	--	--
Solids, Volatile	--	--	81.9	%
Nitrogen, Nitrite (as N)	<0.1	mg/kg	<1.8	mg/kg
Available Nitrogen (IDEM)	--	--	8.2	lbs/ton

MEN01351

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone (219)483-4759 • FAX (219)483-5274

BIOSOLIDS ANALYSIS

REPORT TO	RE
MENASHA CORP P O BOX 155 OTSEGO MI 49078-0155	P O 520262

Report Number	F95177-506
Lab Number	096480
Sample Identification	SLUDGE

Date Sampled	06/21/95
Date Received	06/26/95
Date Reported	07/10/95

Parameter	Wet Basis		Dry Basis	
	Result	Units	Result	Units
Total Nitrogen (N)	810	mg/kg	1.25	%
Total Kjeldahl Nitrogen (TKN)	810	mg/kg	1.25	%
Ammonium Nitrogen (NH4-N)	<1.000	mg/kg	<0.002	%
Nitrate Nitrogen (NO3-N)	<5.000	mg/kg	<0.008	%
Phosphorus (P)	112	mg/kg	0.172	%
Potassium (K)	83	mg/kg	0.128	%
Lead (Pb)	1.1	mg/kg	17	mg/kg
Zinc (Zn)	10.6	mg/kg	163	mg/kg
Nickel (Ni)	0.41	mg/kg	6.3	mg/kg
Copper (Cu)	4.1	mg/kg	63	mg/kg
Cadmium (Cd)	<0.050	mg/kg	<0.8	mg/kg
Solids	6.5	%	100.0	%
Solids, Volatile	-	-	84.9	%
Arsenic (As)	0.02	mg/kg	0.3	mg/kg
Chromium (Cr)	1.0	mg/kg	15.4	mg/kg
Mercury (Hg)	<0.020	mg/kg	<0.31	mg/kg
Molybdenum (Mo)	0.16	mg/kg	2.5	mg/kg
Selenium (Se)	0.05	mg/kg	0.77	mg/kg
Calcium (Ca)	1790	mg/kg	2.75	%
Magnesium (mg)	141	mg/kg	2170	mg/kg
Sodium (Na)	415	mg/kg	6380	mg/kg
Sulfur (S)	224	mg/kg	3450	mg/kg
Iron (Fe)	87.3	mg/kg	1343	mg/kg
Manganese (Mn)	17.1	mg/kg	263	mg/kg
Boron (B)	4.3	mg/kg	66	mg/kg
Chloride (Cl)	280	mg/kg	4310	mg/kg
Nitrogen, Nitrite	<0.010	mg/kg	<0.2	mg/kg
Available Nitrogen (IDEM)	---	--	5.0	lbs/ton

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-926
Phone: 616-399-6070 FAX 616-399-6185

SENT TO: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Len Myers

DATE: May 12, 1993

ANALYSIS OF: Sludge Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on April 7, 1993.

Sample ID: Sludge 4693 Lab ID: 9304048-01 Collected: 04/06/9

TEST	RESULT	UNITS	ANALYZED	METHOD	MI
Arsenic	0.82	mg/kg dry wt.	04/19/93	EPA 7060	0.03
Barium	104	mg/kg dry wt.	04/19/93	EPA 6010	0.
Cadmium	0.80	mg/kg dry wt.	04/19/93	EPA 6010	0.
Chromium	20	mg/kg dry wt.	04/19/93	EPA 6010	1.
Copper	43	mg/kg dry wt.	04/19/93	EPA 6010	0.
Lead	13	mg/kg dry wt.	04/19/93	EPA 6010	2.
Mercury	0.18	mg/kg dry wt.	04/12/93	EPA 7470	0.0
Selenium	0.037	mg/kg dry wt.	04/19/93	EPA 7740	0.03
Silver	0.053	mg/kg dry wt.	04/21/93	EPA 6010	0.0
Zinc	107	mg/kg dry wt.	04/19/93	EPA 6010	1.
Base/Neutrals & Acid Ext.				EPA 8270	
bis(2-chloroethoxy)methane	BDL	µg/kg as recd	04/28/93		9
bis(2-chloroethyl)ether	BDL	µg/kg as recd	04/28/93		9
bis(2-chloroisopropyl)ether	BDL	µg/kg as recd	04/28/93		9
4-bromophenylphenyl ether	BDL	µg/kg as recd	04/28/93		9
4-chlorophenylphenyl ether	BDL	µg/kg as recd	04/28/93		9
bis(2-ethylhexyl)phthalate	1,300	µg/kg as recd	04/28/93		9
Butylbenzylphthalate	BDL	µg/kg as recd	04/28/93		9
Diethylphthalate	BDL	µg/kg as recd	04/28/93		9
Dimethylphthalate	BDL	µg/kg as recd	04/28/93		9
Di-n-butylphthalate	310	µg/kg as recd	04/28/93		9
Di-n-octylphthalate	BDL	µg/kg as recd	04/28/93		9
N-nitrosodimethylamine	BDL	µg/kg as recd	04/28/93		9
N-nitroso-Di-n-propylamine	BDL	µg/kg as recd	04/28/93		9
N-nitrosodiphenylamine	BDL	µg/kg as recd	04/28/93		9
1,2-diphenylhydrazine	BDL	µg/kg as recd	04/28/93		9
2-chloronaphthalene	BDL	µg/kg as recd	04/28/93		9
1,2-dichlorobenzene	BDL	µg/kg as recd	04/28/93		9
1,3-dichlorobenzene	BDL	µg/kg as recd	04/28/93		9
1,4-dichlorobenzene	BDL	µg/kg as recd	04/28/93		9
2,4-dinitrotoluene	BDL	µg/kg as recd	04/28/93		9
2,6-dinitrotoluene	BDL	µg/kg as recd	04/28/93		9

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 4693 Lab ID: 9304048-01 Collected: 04/06/9

TEST	RESULT	UNITS	ANALYZED	METHOD	MD
Base/Neutrals & Acid Ext.				EPA 8270	
Hexachlorobenzene	BDL	µg/kg as recd	04/28/93		9
Hexachlorobutadiene	BDL	µg/kg as recd	04/28/93		9
Hexachlorocyclopentadiene	BDL	µg/kg as recd	04/28/93		90
Hexachloroethane	BDL	µg/kg as recd	04/28/93		9
Isophorone	BDL	µg/kg as recd	04/28/93		9
Nitrobenzene	BDL	µg/kg as recd	04/28/93		9
1,2,4-trichlorobenzene	BDL	µg/kg as recd	04/28/93		9
Benzidine	BDL	µg/kg as recd	04/28/93		9
3,3'-dichlorobenzidine	BDL	µg/kg as recd	04/28/93		9
Acenaphthene	BDL	µg/kg as recd	04/28/93		9
Acenaphthylene	BDL	µg/kg as recd	04/28/93		9
Anthracene	BDL	µg/kg as recd	04/28/93		9
Benzo(a)anthracene	BDL	µg/kg as recd	04/28/93		9
Benzo(a)pyrene	BDL	µg/kg as recd	04/28/93		9
Benzo(b)fluoranthene	BDL	µg/kg as recd	04/28/93		9
Benzo(g,h,i)perylene	BDL	µg/kg as recd	04/28/93		9
Benzo(k)fluoranthene	BDL	µg/kg as recd	04/28/93		9
Chrysene	BDL	µg/kg as recd	04/28/93		9
Dibenzo(a,h)anthracene	BDL	µg/kg as recd	04/28/93		9
Fluoranthene	BDL	µg/kg as recd	04/28/93		9
Fluorene	BDL	µg/kg as recd	04/28/93		9
Indeno(1,2,3-cd)pyrene	BDL	µg/kg as recd	04/28/93		9
Naphthalene	BDL	µg/kg as recd	04/28/93		9
Phenanthrene	BDL	µg/kg as recd	04/28/93		9
Pyrene	BDL	µg/kg as recd	04/28/93		9
Phenol	BDL	µg/kg as recd	04/28/93		9
2-chlorophenol	BDL	µg/kg as recd	04/28/93		9
2,4-dichlorophenol	BDL	µg/kg as recd	04/28/93		9
2,4,6-trichlorophenol	BDL	µg/kg as recd	04/28/93		9
Pentachlorophenol	BDL	µg/kg as recd	04/28/93		9
4-chloro-3-methylphenol	BDL	µg/kg as recd	04/28/93		9
2-nitrophenol	BDL	µg/kg as recd	04/28/93		9
4-nitrophenol	BDL	µg/kg as recd	04/28/93		1,80
2,4-dinitrophenol	BDL	µg/kg as recd	04/28/93		1,80
4,6-dinitro-2-methylphenol	BDL	µg/kg as recd	04/28/93		90
2,4-dimethylphenol	BDL	µg/kg as recd	04/28/93		9
EPA Pesticides & PCBs				EPA 8080	
Aldrin	BDL	µg/kg as recd	04/28/93		0.
Dieldrin	BDL	µg/kg as recd	04/28/93		0.2
4,4'-DDT	BDL	µg/kg as recd	04/28/93		1.
4,4'-DDE	BDL	µg/kg as recd	04/28/93		0.4
4,4'-DDD	BDL	µg/kg as recd	04/28/93		0.6
alpha-Endosulfan	BDL	µg/kg as recd	04/28/93		0.2
beta-Endosulfan	BDL	µg/kg as recd	04/28/93		0.2
Endosulfan sulfate	BDL	µg/kg as recd	04/28/93		0.2
Endrin	BDL	µg/kg as recd	04/28/93		0.2
Endrin aldehyde	BDL	µg/kg as recd	04/28/93		0.2
Heptachlor	BDL	µg/kg as recd	04/28/93		0.
Heptachlor epoxide	BDL	µg/kg as recd	04/28/93		0.7
alpha-BHC	BDL	µg/kg as recd	04/28/93		0.
beta-BHC	BDL	µg/kg as recd	04/28/93		1.

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 4693 Lab ID: 9304048-01 Collected: 04/06/93

TEST	RESULT	UNITS	ANALYZED	METHOD	MDL
EPA Pesticides & PCBs				EPA 8080	
delta-BHC	BDL	µg/kg as recd	04/28/93		0.7
gamma-BHC	BDL	µg/kg as recd	04/28/93		0.4
Chlordane	BDL	µg/kg as recd	04/28/93		7.4
Toxaphene	BDL	µg/kg as recd	04/28/93		27
PCB-1016	BDL	µg/kg as recd	04/28/93		19
PCB-1221	BDL	µg/kg as recd	04/28/93		53
PCB-1232	BDL	µg/kg as recd	04/28/93		19
PCB-1242	BDL	µg/kg as recd	04/28/93		19
PCB-1248	BDL	µg/kg as recd	04/28/93		10
PCB-1254	BDL	µg/kg as recd	04/28/93		4.0
PCB-1260	BDL	µg/kg as recd	04/28/93		19
Herbicides				EPA 8150	
2,4-D	BDL	µg/kg as recd	04/26/93		7.0
2,4,5-TP (Silvex)	BDL	µg/kg as recd	04/26/93		0.70
Method 601 & 602 Volatiles				EPA 8240	
Benzene	BDL	µg/kg	04/26/93		45
Bromodichloromethane	BDL	µg/kg	04/26/93		45
Bromoform	BDL	µg/kg	04/26/93		45
Bromomethane	BDL	µg/kg	04/26/93		45
Carbon Tetrachloride	BDL	µg/kg	04/26/93		45
Chlorobenzene	BDL	µg/kg	04/26/93		45
Chlorodibromomethane	BDL	µg/kg	04/26/93		4
Chloroethane	BDL	µg/kg	04/26/93		4
Chloroform	BDL	µg/kg	04/26/93		45
2-Chloroethyl Vinyl Ether	BDL	µg/kg	04/26/93		9
Chloromethane	BDL	µg/kg	04/26/93		45
1,2-Dichlorobenzene	BDL	µg/kg	04/26/93		4
1,3-Dichlorobenzene	BDL	µg/kg	04/26/93		4
1,4-Dichlorobenzene	BDL	µg/kg	04/26/93		4
Dichlorodifluoromethane	BDL	µg/kg	04/26/93		4
1,1-Dichloroethane	BDL	µg/kg	04/26/93		4
1,2-Dichloroethane	BDL	µg/kg	04/26/93		4
1,1-Dichloroethylene	BDL	µg/kg	04/26/93		4
cis-1,2-Dichloroethylene	BDL	µg/kg	04/26/93		4
trans-1,2-Dichloroethylene	BDL	µg/kg	04/26/93		4
1,2-Dichloropropane	BDL	µg/kg	04/26/93		10
cis-1,3-Dichloropropylene	BDL	µg/kg	04/26/93		4
trans-1,3-Dichloropropylene	BDL	µg/kg	04/26/93		4
Ethyl benzene	46	µg/kg	04/26/93		4
Methylene Chloride	BDL	µg/kg	04/26/93		22
1,1,2,2-Tetrachloroethane	BDL	µg/kg	04/26/93		4
Tetrachloroethylene	BDL	µg/kg	04/26/93		4
Toluene	BDL	µg/kg	04/26/93		4
1,1,1-Trichloroethane	BDL	µg/kg	04/26/93		4
1,1,2-Trichloroethane	55	µg/kg	04/26/93		4
Trichloroethylene	BDL	µg/kg	04/26/93		4
Trichlorofluoromethane	BDL	µg/kg	04/26/93		5
Vinyl Chloride	BDL	µg/kg	04/26/93		4
Xylene	80	µg/kg	04/26/93		4

BDL = Below Detection Limit

MDL = Method Detection Limit

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MEN01355

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue Holland, Michigan 49424-92
Phone: 616-399-6070 FAX 616-399-6185

SENT TO: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Len Myers

DATE: May 14, 1993

ANALYSIS OF: Sludge Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on April 14, 1993.

Sample ID: Sludge 4693 Lab ID: 9304094-01 Collected: 04/13/

TEST	RESULT	UNITS	ANALYZED	METHOD	M
Arsenic	0.74	mg/kg dry wt.	04/19/93	EPA 7060	0.02
Barium	97	mg/kg dry wt.	04/19/93	EPA 6010	0.
Cadmium	0.78	mg/kg dry wt.	04/19/93	EPA 6010	0.
Chromium	15	mg/kg dry wt.	04/19/93	EPA 6010	1.
Copper	40	mg/kg dry wt.	04/19/93	EPA 6010	0.
Lead	12	mg/kg dry wt.	04/19/93	EPA 6010	2.
Mercury	0.14	mg/kg dry wt.	04/16/93	EPA 7470	0.0
Selenium	0.56	mg/kg dry wt.	04/19/93	EPA 7740	0.02
Silver	0.53	mg/kg dry wt.	04/27/93	EPA 6010	0.
Zinc	93	mg/kg dry wt.	04/19/93	EPA 6010	1.
Base/Neutrals & Acid Ext.				EPA 8270	
bis(2-chloroethoxy)methane	BDL	µg/kg as recd	04/26/93		10
bis(2-chloroethyl)ether	BDL	µg/kg as recd	04/26/93		10
bis(2-chloroisopropyl)ether	BDL	µg/kg as recd	04/26/93		10
4-bromophenylphenyl ether	BDL	µg/kg as recd	04/26/93		10
4-chlorophenylphenyl ether	BDL	µg/kg as recd	04/26/93		10
bis(2-ethylhexyl)phthalate	1,500	µg/kg as recd	04/26/93		10
Butylbenzylphthalate	BDL	µg/kg as recd	04/26/93		10
Diethylphthalate	BDL	µg/kg as recd	04/26/93		10
Dimethylphthalate	BDL	µg/kg as recd	04/26/93		10
Di-n-butylphthalate	1,800	µg/kg as recd	04/26/93		10
Di-n-octylphthalate	BDL	µg/kg as recd	04/26/93		10
N-nitrosodimethylamine	BDL	µg/kg as recd	04/26/93		1
N-nitroso-Di-n-propylamine	BDL	µg/kg as recd	04/26/93		20
N-nitrosodiphenylamine	BDL	µg/kg as recd	04/26/93		10
1,2-diphenylhydrazine	BDL	µg/kg as recd	04/26/93		10
2-chloronaphthalene	BDL	µg/kg as recd	04/26/93		10
1,2-dichlorobenzene	BDL	µg/kg as recd	04/26/93		10
1,3-dichlorobenzene	BDL	µg/kg as recd	04/26/93		10
1,4-dichlorobenzene	BDL	µg/kg as recd	04/26/93		10
2,4-dinitrotoluene	BDL	µg/kg as recd	04/26/93		10
2,6-dinitrotoluene	BDL	µg/kg as recd	04/26/93		10

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 4693 Lab ID: 9304094-01 Collected: 04/13/9

TEST	RESULT	UNITS		ANALYZED	METHOD	MD
Base/Neutrals & Acid Ext.					EPA 8270	
Hexachlorobenzene	BDL	µg/kg	as recd	04/26/93		10
Hexachlorobutadiene	BDL	µg/kg	as recd	04/26/93		10
Hexachlorocyclopentadiene	BDL	µg/kg	as recd	04/26/93		1,00
Hexachloroethane	BDL	µg/kg	as recd	04/26/93		10
Isophorone	BDL	µg/kg	as recd	04/26/93		10
Nitrobenzene	BDL	µg/kg	as recd	04/26/93		10
1,2,4-trichlorobenzene	BDL	µg/kg	as recd	04/26/93		10
Benzidine	BDL	µg/kg	as recd	04/26/93		10
3,3'-dichlorobenzidine	BDL	µg/kg	as recd	04/26/93		10
Acenaphthene	BDL	µg/kg	as recd	04/26/93		10
Acenaphthylene	BDL	µg/kg	as recd	04/26/93		10
Anthracene	BDL	µg/kg	as recd	04/26/93		10
Benzo(a)anthracene	BDL	µg/kg	as recd	04/26/93		10
Benzo(a)pyrene	BDL	µg/kg	as recd	04/26/93		10
Benzo(b)fluoranthene	BDL	µg/kg	as recd	04/26/93		10
Benzo(g,h,i)perylene	BDL	µg/kg	as recd	04/26/93		10
Benzo(k)fluoranthene	BDL	µg/kg	as recd	04/26/93		10
Chrysene	BDL	µg/kg	as recd	04/26/93		10
Dibenzo(a,h)anthracene	BDL	µg/kg	as recd	04/26/93		10
Fluoranthene	BDL	µg/kg	as recd	04/26/93		10
Fluorene	BDL	µg/kg	as recd	04/26/93		10
Indeno(1,2,3-cd)pyrene	BDL	µg/kg	as recd	04/26/93		10
Naphthalene	BDL	µg/kg	as recd	04/26/93		10
Phenanthrene	BDL	µg/kg	as recd	04/26/93		10
Pyrene	BDL	µg/kg	as recd	04/26/93		10
Phenol	BDL	µg/kg	as recd	04/26/93		10
2-chlorophenol	BDL	µg/kg	as recd	04/26/93		10
2,4-dichlorophenol	BDL	µg/kg	as recd	04/26/93		10
2,4,6-trichlorophenol	BDL	µg/kg	as recd	04/26/93		10
Pentachlorophenol	BDL	µg/kg	as recd	04/26/93		10
4-chloro-3-methylphenol	BDL	µg/kg	as recd	04/26/93		10
2-nitrophenol	BDL	µg/kg	as recd	04/26/93		10
4-nitrophenol	BDL	µg/kg	as recd	04/26/93		10
2,4-dinitrophenol	BDL	µg/kg	as recd	04/26/93		1,00
4,6-dinitro-2-methylphenol	BDL	µg/kg	as recd	04/26/93		1,00
2,4-dimethylphenol	BDL	µg/kg	as recd	04/26/93		1,00
EPA Pesticides & PCBs					EPA 8080	20
Aldrin	0.38	µg/kg	as recd	04/28/93		0.02
Dieldrin	BDL	µg/kg	as recd	04/28/93		0.02
4,4'-DDT	BDL	µg/kg	as recd	04/28/93		0.05
4,4'-DDE	BDL	µg/kg	as recd	04/28/93		0.09
4,4'-DDD	BDL	µg/kg	as recd	04/28/93		0.1
alpha-Endosulfan	0.12	µg/kg	as recd	04/28/93		0.03
beta-Endosulfan	BDL	µg/kg	as recd	04/28/93		0.03
Endosulfan sulfate	0.040	µg/kg	as recd	04/28/93		0.03
Endrin	2.4	µg/kg	as recd	04/28/93		0.08
Endrin aldehyde	BDL	µg/kg	as recd	04/28/93		0.03
Heptachlor	3.3	µg/kg	as recd	04/28/93		0.02
Heptachlor epoxide	BDL	µg/kg	as recd	04/28/93		1.
alpha-BHC	BDL	µg/kg	as recd	04/28/93		0.7

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 4693 Lab ID: 9304094-01 Collected: 04/13/

TEST	RESULT	UNITS		ANALYZED	METHOD	MD
EPA Pesticides & PCBs					EPA 8080	
beta-BHC	BDL	µg/kg	as recd	04/28/93		1.
delta-BHC	0.64	µg/kg	as recd	04/28/93		0.2
gamma-BHC	0.58	µg/kg	as recd	04/28/93		0.02
Chlordane	BDL	µg/kg	as recd	04/28/93		1
Toxaphene	BDL	µg/kg	as recd	04/28/93		1..
PCB-1016	BDL	µg/kg	as recd	04/28/93		1.
PCB-1221	BDL	µg/kg	as recd	04/28/93		9.
PCB-1232	BDL	µg/kg	as recd	04/28/93		1.
PCB-1242	BDL	µg/kg	as recd	04/28/93		10
PCB-1248	BDL	µg/kg	as recd	04/28/93		1.
PCB-1254	BDL	µg/kg	as recd	04/28/93		8.
PCB-1260	BDL	µg/kg	as recd	04/28/93		8.
Herbicides					EPA 8150	
2,4-D	BDL	µg/kg	as recd	04/26/93		7.
2,4,5-TP (Silvex)	BDL	µg/kg	as recd	04/26/93		0.7
Method 601 & 602 Volatiles					EPA 8240	
Benzene	BDL	µg/kg		04/23/93		1
Bromodichloromethane	BDL	µg/kg		04/23/93		1
Bromoform	BDL	µg/kg		04/23/93		1
Bromomethane	BDL	µg/kg		04/23/93		1
Carbon Tetrachloride	BDL	µg/kg		04/23/93		1
Chlorobenzene	BDL	µg/kg		04/23/93		1
Chlorodibromomethane	BDL	µg/kg		04/23/93		1
Chloroethane	BDL	µg/kg		04/23/93		1
Chloroform	BDL	µg/kg		04/23/93		1
2-Chloroethyl Vinyl Ether	BDL	µg/kg		04/23/93		2
Chloromethane	BDL	µg/kg		04/23/93		1
1,2-Dichlorobenzene	BDL	µg/kg		04/23/93		1
1,3-Dichlorobenzene	BDL	µg/kg		04/23/93		1
1,4-Dichlorobenzene	BDL	µg/kg		04/23/93		1
Dichlorodifluoromethane	BDL	µg/kg		04/23/93		1
1,1-Dichloroethane	BDL	µg/kg		04/23/93		1
1,2-Dichloroethane	BDL	µg/kg		04/23/93		1
1,1-Dichloroethylene	BDL	µg/kg		04/23/93		1
cis-1,2-Dichloroethylene	BDL	µg/kg		04/23/93		1
trans-1,2-Dichloroethylene	BDL	µg/kg		04/23/93		1
1,2-Dichloropropane	BDL	µg/kg		04/23/93		1
cis-1,3-Dichloropropylene	BDL	µg/kg		04/23/93		1
trans-1,3-Dichloropropylene	BDL	µg/kg		04/23/93		1
Ethyl benzene	BDL	µg/kg		04/23/93		1
Methylene Chloride	BDL	µg/kg		04/23/93		5
1,1,2,2-Tetrachloroethane	BDL	µg/kg		04/23/93		1
Tetrachloroethylene	BDL	µg/kg		04/23/93		1
Toluene	BDL	µg/kg		04/23/93		1
1,1,1-Trichloroethane	BDL	µg/kg		04/23/93		1
1,1,2-Trichloroethane	BDL	µg/kg		04/23/93		1
Trichloroethylene	BDL	µg/kg		04/23/93		1
Trichlorofluoromethane	BDL	µg/kg		04/23/93		1
Vinyl Chloride	BDL	µg/kg		04/23/93		1
Xylene	BDL	µg/kg		04/23/93		1

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-926
Phone: 616-399-6070 FAX: 616-399-6185

SENT TO: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Len Myers

DATE: May 14, 1993

ANALYSIS OF: Sludge Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on April 21, 1993.

Sample ID: Sludge 42093 Lab ID: 9304139-01 Collected: 04/20/

TEST	RESULT	UNITS	ANALYZED	METHOD	MD
Arsenic	1.0	mg/kg dry wt.	05/10/93	EPA 7060	0.02
Barium	130	mg/kg dry wt.	05/04/93	EPA 6010	0.
Cadmium	1.8	mg/kg dry wt.	05/04/93	EPA 6010	0.
Chromium	28	mg/kg dry wt.	05/04/93	EPA 6010	1.
Copper	59	mg/kg dry wt.	05/04/93	EPA 6010	0.
Lead	22	mg/kg dry wt.	05/04/93	EPA 6010	2.
Mercury	0.18	mg/kg dry wt.	04/26/93	EPA 7470	0.0
Selenium	BDL	mg/kg dry wt.	05/10/93	EPA 7740	0.02
Silver	BDL	mg/kg dry wt.	05/05/93	EPA 6010	0.
Zinc	140	mg/kg dry wt.	05/04/93	EPA 6010	1.
Base/Neutrals & Acid Ext.				EPA 8270	
bis(2-chloroethoxy)methane	BDL	µg/kg as recd	05/07/93		5
bis(2-chloroethyl)ether	BDL	µg/kg as recd	05/07/93		5
bis(2-chloroisopropyl)ether	BDL	µg/kg as recd	05/07/93		5
4-bromophenylphenyl ether	BDL	µg/kg as recd	05/07/93		5
4-chlorophenylphenyl ether	BDL	µg/kg as recd	05/07/93		5
bis(2-ethylhexyl)phthalate	1,000	µg/kg as recd	05/07/93		5
Butylbenzylphthalate	440	µg/kg as recd	05/07/93		5
Diethylphthalate	BDL	µg/kg as recd	05/07/93		5
Dimethylphthalate	BDL	µg/kg as recd	05/07/93		5
Di-n-butylphthalate	1,800	µg/kg as recd	05/07/93		5
Di-n-octylphthalate	BDL	µg/kg as recd	05/07/93		10
N-nitrosodimethylamine	BDL	µg/kg as recd	05/07/93		1,10
N-nitroso-Di-n-propylamine	BDL	µg/kg as recd	05/07/93		10
N-nitrosodiphenylamine	BDL	µg/kg as recd	05/07/93		5
1,2-diphenylhydrazine	BDL	µg/kg as recd	05/07/93		5
2-chloronaphthalene	BDL	µg/kg as recd	05/07/93		5
1,2-dichlorobenzene	BDL	µg/kg as recd	05/07/93		5
1,3-dichlorobenzene	BDL	µg/kg as recd	05/07/93		5
1,4-dichlorobenzene	BDL	µg/kg as recd	05/07/93		5
2,4-dinitrotoluene	BDL	µg/kg as recd	05/07/93		50
2,6-dinitrotoluene	BDL	µg/kg as recd	05/07/93		50

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 42093 Lab ID: 9304139-01 Collected: 04/20/9

TEST	RESULT	UNITS		ANALYZED	METHOD	MD
Base/Neutrals & Acid Ext.					EPA 8270	
Hexachlorobenzene	BDL	µg/kg	as recd	05/07/93		5
Hexachlorobutadiene	BDL	µg/kg	as recd	05/07/93		5
Hexachlorocyclopentadiene	BDL	µg/kg	as recd	05/07/93		50
Hexachloroethane	BDL	µg/kg	as recd	05/07/93		5
Isophorone	BDL	µg/kg	as recd	05/07/93		5
Nitrobenzene	BDL	µg/kg	as recd	05/07/93		5
1,2,4-trichlorobenzene	BDL	µg/kg	as recd	05/07/93		5
Benzidine	BDL	µg/kg	as recd	05/07/93		5
3,3'-dichlorobenzidine	BDL	µg/kg	as recd	05/07/93		5
Acenaphthene	BDL	µg/kg	as recd	05/07/93		5
Acenaphthylene	BDL	µg/kg	as recd	05/07/93		5
Anthracene	BDL	µg/kg	as recd	05/07/93		5
Benzo(a)anthracene	BDL	µg/kg	as recd	05/07/93		5
Benzo(a)pyrene	BDL	µg/kg	as recd	05/07/93		5
Benzo(b)fluoranthene	BDL	µg/kg	as recd	05/07/93		5
Benzo(g,h,i)perylene	BDL	µg/kg	as recd	05/07/93		5
Benzo(k)fluoranthene	BDL	µg/kg	as recd	05/07/93		5
Chrysene	BDL	µg/kg	as recd	05/07/93		5
Dibenzo(a,h)anthracene	BDL	µg/kg	as recd	05/07/93		5
Fluoranthene	BDL	µg/kg	as recd	05/07/93		5
Fluorene	BDL	µg/kg	as recd	05/07/93		5
Indeno(1,2,3-cd)pyrene	BDL	µg/kg	as recd	05/07/93		5
Naphthalene	BDL	µg/kg	as recd	05/07/93		5
Phenanthrene	BDL	µg/kg	as recd	05/07/93		5
Pyrene	BDL	µg/kg	as recd	05/07/93		5
Phenol	BDL	µg/kg	as recd	05/07/93		5
2-chlorophenol	BDL	µg/kg	as recd	05/07/93		5
2,4-dichlorophenol	BDL	µg/kg	as recd	05/07/93		5
2,4,6-trichlorophenol	BDL	µg/kg	as recd	05/07/93		5
Pentachlorophenol	BDL	µg/kg	as recd	05/07/93		5
4-chloro-3-methylphenol	BDL	µg/kg	as recd	05/07/93		5
2-nitrophenol	BDL	µg/kg	as recd	05/07/93		5
4-nitrophenol	BDL	µg/kg	as recd	05/07/93		50
2,4-dinitrophenol	BDL	µg/kg	as recd	05/07/93		50
4,6-dinitro-2-methylphenol	BDL	µg/kg	as recd	05/07/93		50
2,4-dimethylphenol	BDL	µg/kg	as recd	05/07/93		5
EPA Pesticides & PCBs					EPA 8080	
Aldrin	BDL	µg/kg	as recd	04/28/93		0.03
Dieldrin	BDL	µg/kg	as recd	04/28/93		0.03
4,4'-DDT	0.52	µg/kg	as recd	04/28/93		0.05
4,4'-DDE	3.0	µg/kg	as recd	04/28/93		0.03
4,4'-DDD	BDL	µg/kg	as recd	04/28/93		0.9
alpha-Endosulfan	0.71	µg/kg	as recd	04/28/93		0.03
beta-Endosulfan	BDL	µg/kg	as recd	04/28/93		0.5
Endosulfan sulfate	BDL	µg/kg	as recd	04/28/93		0.1
Endrin	4.0	µg/kg	as recd	04/28/93		0.09
Endrin aldehyde	BDL	µg/kg	as recd	04/28/93		0.03
Heptachlor	8.0	µg/kg	as recd	04/28/93		0.03
Heptachlor epoxide	BDL	µg/kg	as recd	04/28/93		5.
alpha-BHC	BDL	µg/kg	as recd	04/28/93		0.02

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

Sample ID: Sludge 42093 Lab ID: 9304139-01 Collected: 04/20/9

TEST	RESULT	UNITS		ANALYZED	METHOD	MD
EPA Pesticides & PCBs					EPA 8080	
beta-BHC	BDL	µg/kg	as recd	04/28/93		5.
delta-BHC	BDL	µg/kg	as recd	04/28/93		0.3
gamma-BHC	BDL	µg/kg	as recd	04/28/93		0.03
Chlordane	BDL	µg/kg	as recd	04/28/93		3
Toxaphene	BDL	µg/kg	as recd	04/28/93		7
PCB-1016	BDL	µg/kg	as recd	04/28/93		2.
PCB-1221	BDL	µg/kg	as recd	04/28/93		1.
PCB-1232	BDL	µg/kg	as recd	04/28/93		2.
PCB-1242	BDL	µg/kg	as recd	04/28/93		10
PCB-1248	BDL	µg/kg	as recd	04/28/93		2.
PCB-1254	BDL	µg/kg	as recd	04/28/93		4.
PCB-1260	BDL	µg/kg	as recd	04/28/93		1
Herbicides					EPA 8150	
2,4-D	BDL	µg/kg	as recd	04/26/93		7.
2,4,5-TP (Silvex)	BDL	µg/kg	as recd	04/26/93		0.7
Method 601 & 602 Volatiles					EPA 8240	
Benzene	BDL	µg/kg		04/23/93		1
Bromodichloromethane	BDL	µg/kg		04/23/93		1
Bromoform	BDL	µg/kg		04/23/93		1
Bromomethane	BDL	µg/kg		04/23/93		1
Carbon Tetrachloride	BDL	µg/kg		04/23/93		1
Chlorobenzene	BDL	µg/kg		04/23/93		1
Chlorodibromomethane	BDL	µg/kg		04/23/93		1
Chloroethane	BDL	µg/kg		04/23/93		1
Chloroform	BDL	µg/kg		04/23/93		1
2-Chloroethyl Vinyl Ether	BDL	µg/kg		04/23/93		2
Chloromethane	BDL	µg/kg		04/23/93		1
1,2-Dichlorobenzene	BDL	µg/kg		04/23/93		1
1,3-Dichlorobenzene	BDL	µg/kg		04/23/93		1
1,4-Dichlorobenzene	BDL	µg/kg		04/23/93		1
Dichlorodifluoromethane	BDL	µg/kg		04/23/93		1
1,1-Dichloroethane	BDL	µg/kg		04/23/93		1
1,2-Dichloroethane	BDL	µg/kg		04/23/93		1
1,1-Dichloroethylene	BDL	µg/kg		04/23/93		1
cis-1,2-Dichloroethylene	BDL	µg/kg		04/23/93		1
trans-1,2-Dichloroethylene	BDL	µg/kg		04/23/93		1
1,2-Dichloropropane	BDL	µg/kg		04/23/93		1
cis-1,3-Dichloropropylene	BDL	µg/kg		04/23/93		1
trans-1,3-Dichloropropylene	BDL	µg/kg		04/23/93		1
Ethyl benzene	BDL	µg/kg		04/23/93		1
Methylene Chloride	BDL	µg/kg		04/23/93		5
1,1,2,2-Tetrachloroethane	BDL	µg/kg		04/23/93		1
Tetrachloroethylene	BDL	µg/kg		04/23/93		1
Toluene	BDL	µg/kg		04/23/93		1
1,1,1-Trichloroethane	BDL	µg/kg		04/23/93		1
1,1,2-Trichloroethane	BDL	µg/kg		04/23/93		1
Trichloroethylene	BDL	µg/kg		04/23/93		1
Trichlorofluoromethane	BDL	µg/kg		04/23/93		1
Vinyl Chloride	BDL	µg/kg		04/23/93		1
Xylene	BDL	µg/kg		04/23/93		1

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue Holland Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

TO: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: June 29, 1992

ANALYSIS: OF SLUDGE SAMPLE

REPORTED BY: Robert K. Zahray, Laboratory Manager

SAMPLING DATE: Received from client May 5, 1992.

RESULTS: Expressed as noted below.

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
9205038-1	Sludge Sample	Method 601 & 602 Volatiles	See page 2
		Base/Neutrals & Acid Extractables	See page 3
		EPA Pesticides & PCB's	See page 4
		TCLP	See Attached Report

Note: The TCLP report is not included in the numbering of these pages, it is provided as an attachment.

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

TABLE 1
601 & 602 VOLATILES
Results for Menasha Corporation
Received May 5, 1992. Reported June 29, 1992.
Expressed as micrograms per liter (µg/ℓ).

Parameter	Sludge Sample
Benzene	*
Bromodichloromethane	*
Bromoform	*
Bromomethane	*
Carbon Tetrachloride	*
Chlorobenzene	*
Chlorodibromomethane	*
Chloroethane	*
Chloroform	*
2-Chloroethyl Vinyl Ether (180)	*
Chloromethane	*
1,2-Dichlorobenzene	*
1,3-Dichlorobenzene	*
1,4-Dichlorobenzene	*
Dichlorodifluoromethane	*
1,1-Dichloroethane	*
1,2-Dichloroethane	*
1,1-Dichloroethylene	*
cis-1,2-Dichloroethylene	*
trans-1,2-Dichloroethylene	*
1,2-Dichloropropane	*
cis-1,3-Dichloropropylene	*
trans-1,3-Dichloropropylene	*
Ethyl Benzene	*
Methylene Chloride (500)	*
1,1,2,2-Tetrachlorethane	*
Tetrachloroethylene	*
Toluene	28,000
1,1,1-Trichloroethane	*
1,1,2-Trichloroethane	*
Trichloroethylene	*
Trichlofluoromethane (130)	*
Vinyl Chloride	*
Xylene	*

ESI #9205038 -1

* = Below detection limit which is 100 except where noted in parentheses.

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

TABLE 2
BASE NEUTRALS & ACID EXTRACTABLES
Results for Menasha Corporation
Received May 5, 1992. Reported June 29, 1992.
Expressed as micrograms per liter (µg/ℓ).

Parameter	Sludge Sample
bis(2-chloroethoxy)methane	*
bis(2-chloroethyl)ether	*
bis(2-chloroisopropyl)ether	*
4-bromophenylphenyl ether (6.0)	*
4-chlorophenylphenyl ether (6.0)	*
bis(2-ethylhexyl)phthalate (70)	*
butylbenzylphthalate	*
diethylphthalate	*
dimethylphthalate	*
di-n-butylphthalate	*
di-n-octylphthalate	*
N-nitrosodimethylamine	*
N-nitroso-di-n-propylamine	36
N-nitrosodiphenylamine	*
1,2-diphenylhydrazine (6.0)	*
2-chloronaphthalene	*
1,2-dichlorobenzene	*
1,3-dichlorobenzene	*
1,4-dichlorobenzene	29
2,4-dinitrotoluene	38
2,6-dinitrotoluene	*
hexachlorobenzene (6.0)	*
hexachlorobutadiene (6.0)	*
hexachlorocyclopentadiene (75)	*
hexachloroethane	*
isophorone	*
nitrobenzene	*
1,2,4-trichlorobenzene	41
benzidine (15)	*
3,3-dichlorobenzidine (15)	*
acenaphthene	44
acenaphthylene	*
anthracene	*
benzo(a)anthracene	*
benzo(a)pyrene	*
benzo(b)fluoranthene	*
benzo(g,h,i)perylene (30)	*
benzo(k)fluoranthene	*
chrysene	*
dibenzo(a,h)anthracene (30)	*
fluoranthene	*
fluorene	*
indeno(1,2,3-cd)pyrene	*
naphthalene	*
phenanthrene	*
pyrene	62
phenol	*
2-chlorophenol	*
2,4-dichlorophenol	*
2,4,6-trichlorophenol	*
pentachlorophenol	6.4
4-chloro-3-methylphenol	*
2-nitrophenol (4.0)	*
4-nitrophenol	*
2,4-dinitrophenol	*
4,6-dinitro-2-methylphenol	*
2,4-dimethylphenol	*
ESI #9205038	-1

* = Below detection limit which is 3.0 except where noted in parentheses.

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

TABLE 3
PESTICIDES & PCB's
Results for Menasha Corporation
Received May 5, 1992. Reported June 29, 1992.
Expressed as micrograms per liter (μg/ℓ).

Parameter	Sludge Sample
aldrin (0.08)	*
dieldrin (0.23)	*
4,4'-DDT (0.04)	*
4,4'-DDE (0.02)	*
4,4'-DDD (0.02)	*
alpha-endosulfan (0.06)	*
beta-endosulfan (0.17)	*
endosulfan sulfate (0.07)	*
endrin (0.02)	*
endrin aldehyde (0.01)	*
heptachlor (0.11)	*
heptachlor epoxide (0.04)	*
alpha-BHC (0.07)	*
beta-BHC (0.09)	*
delta-BHC (0.11)	*
gamma-BHC(lindane) (0.02)	*
chlordane (0.57)	*
toxaphene (2.9)	*
PCB-1016 (1.9)	*
PCB-1221 (9.3)	*
PCB-1232 (1.9)	*
PCB-1242 (1.9)	*
PCB-1248 (1.9)	*
PCB-1254 (2.6)	*
PCB-1260 (2.6)	*
ESI #9205038	-1

* = Below detection limit which is noted in parentheses.

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

DESCRIPTION

The sample consisted of dark brown sludge. The material contained a filterable liquid portion of 83.16 grams which was separated and recombined with the TCLP extract.

A representative sample portion of 216.84 grams was used in the extraction; the amount of extraction fluid (Extraction Fluid #1) used was a volume equal to twenty (20) times the dry solid weight equivalent of this sample amount. The final pH of the TCLP extract after the extraction period was 5.1

TABLE OF RESULTS

TCLP EXTRACT
INORGANIC COMPOUND (METALS) ANALYSIS

Sample Identification: Sludge Sample
Submitted By: Menasha Corporation
Date Received: May 5, 1992
Leaching Procedure Initiated: May 12, 1992
Results Reported: June 29, 1992

Results expressed as milligrams per liter (mg/ℓ).

Parameter	Corrected Extract Concentration	Percent Recovery Correction Factor	Uncorrected Extract Concentration	Regulatory Limit (mg/ℓ)
Silver	**	33	0.0079[1]	5.0
Arsenic	**	106	<0.005	5.0
Barium	2.1	90	1.9	100.0
Cadmium	**	79	0.0003	1.0
Chromium	**	90	<0.005	5.0
Copper	**	87	<0.01	100*
Mercury	**	98	<0.0005	0.2
Lead	**	50.4	<0.005	5.0
Selenium	**	91	<0.005	1.0
Zinc	2.1	53	1.1	500*

ESI #9205038 -1

** = Not Applicable
* = Michigan Dept. of Natural Resources Limits
[1] = Determined by Method of Standard Additions

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

DESCRIPTION

The sample consisted of dark brown sludge. The material contained a filterable liquid portion of 83.16 grams which was separated and recombined with the TCLP extract.

A representative sample portion of 216.84 grams was used in the extraction; the amount of extraction fluid (Extraction Fluid #1) used was a volume equal to twenty (20) times the dry solid weight equivalent of this sample amount. The final pH of the TCLP extract after the extraction period was 5.1

TABLE OF RESULTS

TCLP EXTRACT
BASE/NEUTRAL & ACID ANALYSIS

Sample Identification: Sludge Sample
Submitted By: Menasha Corporation
Date Received: May 5, 1992
Leaching Procedure Initiated: May 12, 1992
Results Reported: June 29, 1992

Results expressed as micrograms per liter (µg/ℓ).

Parameter	Corrected Extract Concentration	Percent Spike Recoveries 9106220-2	Uncorrected Extract Concentration	Maximum Concentration For Toxicity Characteristic
1,4-Dichlorobenzene	**	63	<3.0	7500
2,4-Dinitrotoluene	**	120	<3.0	130
Hexachloro-1,3-butadiene	**	56	<6.0	500
Hexachlorobenzene	**	66	<6.0	130
Hexachloroethane	**	30	<3.0	3000
Nitrobenzene	**	72	<3.0	2000
Pyridine	**	17	<30	5000
m-cresol	**	74	<30	200,000
o-cresol	340	55	190	200,000
p-cresol	**	55	<30	200,000
Pentachlorophenol	**	130	<15	100,000
2,4,5-Trichlorophenol	**	140	<15	400,000
2,4,6-Trichlorophenol	**	99	<15	2000

ESI #9205038 -1

** = Not Applicable

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

DESCRIPTION

The sample consisted of dark brown sludge. The material contained a filterable liquid portion of 28 grams which was separated and recombined with the TCLP extract.

A representative sample portion of 10.9 grams was used in the extraction; the amount of extraction fluid (Extraction Fluid #1) used was a volume equal to twenty (20) times the dry solid weight equivalent of this sample amount.

TABLE OF RESULTS

TCLP EXTRACT
VOLATILES ANALYSIS

Sample Identification: Sludge Sample
Submitted By: Menasha Corporation
Date Received: May 5, 1992
Leaching Procedure Initiated: May 13, 1992.
Results Reported: June 29, 1992

Results expressed as micrograms per liter (µg/ℓ).

Parameter	Corrected Extract Concentration	Percent Spike Recoveries 9106220-2	Uncorrected Extract Concentration	Maximum Concentration For Toxicity Characteristic
Benzene	**	50	<10	500
Carbon Tetrachloride	**	46	<10	500
Chlorobenzene	**	44	<10	100,000
Chloroform	**	53	<10	6000
1,2-Dichloroethane	**	50	<10	500
1,1-Dichloroethylene	**	57	<10	700
Methyl ethyl ketone	**	947	<500	200,000
Tetrachloroethylene	**	45	<10	700
Trichloroethylene	**	40	<10	500
Vinyl Chloride	**	17	<10	200

ESI #9205038 -1

** = Not Applicable

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WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

DESCRIPTION

The sample consisted of dark brown sludge. The material contained a filterable liquid portion of 28.32 grams which was separated and recombined with the TCLP extract.

A representative sample portion of 71.68 grams was used in the extraction; the amount of extraction fluid (Extraction Fluid #1) used was a volume equal to twenty (20) times the dry solid weight equivalent of this sample amount. The final pH of the TCLP extract after the extraction period was 5.1.

TABLE OF RESULTS

TCLP PROCEDURE
HERBICIDES ANALYSIS

Sample Identification: Sludge Sample
Submitted By: Menasha Corporation
Date Received: May 5, 1992
Leaching Procedure Initiated: May 12, 1992
Results Reported: June 29, 1992

Results expressed as micrograms per liter (μg/ℓ)

Parameter	Corrected Extract Concentration	Percent Recovery Correction Factor	Uncorrected Extract Concentration	Maximum Concentration For Toxicity Characteristic
2,4-Dichlorophen-oxyacetic Acid	**	120	<0.32	10,000
Trichlorophen-oxypropionic Acid	**	150	<0.097	1,000
ESI #9205038	-1			

** = Not Applicable

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DESCRIPTION

The sample consisted of dark brown sludge. The material contained a filterable liquid portion of 28.32 grams which was separated and recombined with the TCLP extract.

A representative sample portion of 71.68 grams was used in the extraction; the amount of extraction fluid (Extraction Fluid #1) used was a volume equal to twenty (20) times the dry solid weight equivalent of this sample amount. The final pH of the TCLP extract after the extraction period was 5.1.

TABLE OF RESULTS

TCLP PROCEDURE
PESTICIDES ANALYSIS

Sample Identification: Sludge Sample
Submitted By: Menasha Corporation
Date Received: May 5, 1992
Leaching Procedure Initiated: May 12, 1992
Results Reported: June 29, 1992

Results expressed as micrograms per liter (μg/ℓ)

Parameter	Corrected Extract Concentration	Percent Recovery Correction Factor	Uncorrected Extract Concentration	Maximum Concentration For Toxicity Characteristic
Chlordane	**	**	<2.2	30
Heptachlor	**	180	<0.20	8
Endrin	**	210	<0.024	20
Lindane	**	150	<0.07	400
Methoxychlor	**	290	<0.057	10,000
Toxaphene	**	**	<14	500

ESI #9205038 -1

** = Not Applicable

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CONCLUSION

The conclusion is based on the assumption that the waste is not a listed waste. If the waste stream represented is a listed waste, the following conclusions do not apply, and appropriate regulatory limits for that specific waste must be applied to correctly interpret the data.

Based on this evaluation, none of the parameters evaluated were present at levels exceeding the maximum extract concentrations specified by the EPA and the Michigan Department of Natural Resources for application of the Toxicity Characteristic test. Therefore, this waste is classified as non-hazardous in accordance with the provisions set forth in 40 CFR 261.24 and Act 64.

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MEN01371

TCDD/TCDF TESTS ON WASTE WATER SLUDGE

DOCUMENT #37

Memo

PAPERBOARD DIVISION

MENASHA CORPORATION

TO: Paul Jachim

FROM: Keith Kling KBK

DATE: August 20, 1992

SUBJECT: Dioxin/Furan Study

cc: Jim Porter
Pete DeRossi
Dan O'Neil
Fred Dindoffer

==========

Test results for dioxins/furans have been completed on several samples as follows.

1. Alta Labs, Sludge, 4/24/92
2. Alta Labs, Sludge, 7/21/92
3. Triangle Labs, Sludge, 8/11/92
4. Alta Labs, Sludge Leachate, 7/21/92
5. Alta Labs, Sodium Carbonate, 7/21/92
6. Alta Labs, Kraft Stock, 7/21/92
7. Alta Labs, Digester Stock, 7/21/92

The results of each analysis is attached. A table indicating the toxic equivalency of PCDD and PCDF as compared to 2, 3, 7, 8, TCDD is also attached.

In general, the results indicate that there are low levels of dioxins and furans in our sludge. The levels are magnitudes of order below regulated conditions.

The tests also show that these chemicals are not being formed in our digester or SLI processes, but are being brought in as a contaminant of the waste paper. A review of NCASI Bulletin No. 590, "USEPA/Paper Industry Cooperative Dioxin Study: The 104 Mill Study" indicates that the levels found in our waste paper are within ranges found at other recycle mills.

Test results on leachate from the sludge using TCLP methods indicate that the dioxins/furans are not easily leachable, with non-detectable results in all categories.

The results are being shared with Dan O'Neil of RMT and Fred Dindoffer of Bodman, Longley, and Dahling to help in determining the appropriate information to include in our Program for Effective Residuals Management.

KBK:amc

Toxicity Equivalence Factors (TEFs) for PCDDs and PCDFs[a]	
Congeners	TEF
Mono-, Di-, and TriCDDs	0
2,3,7,8-TCDD Other TCDD Isomers	1 0
1,2,3,7,8-PentaCDD Other PentaCDD Isomers	0.5 0
2,3,7,8-HexaCDDs[b] Other HexaCDD Isomers	0.1 0
2,3,7,8-HeptaCDDs[b] Other HeptaCDD Isomers	0.01 0
OCDD	0.001
Mono-, Di-, and TriCDFs	0
2,3,7,8-TCDF	0.1
1,2,3,7,8-PentaCDF 2,3,4,7,8-PentaCDF Other PentaCDF Isomers	0.05 0.5 0
2,3,7,8-HexaCDF[b] Other HexaCDF Isomers	0.1 0
2,3,7,8-HeptaCDFs[b] Other HeptaCDF Isomers	0.01 0
OCDF	0

[a] From USEPA (1989).

[b] Includes all relevant congeners having chlorine atoms in the 2,3,7, and 8- positions on the molecule; e.g., 1,2,3,4,7,8- 1,2,3,6,7,8- and 1,2,3,7,8,9-HexaCDD.

MEN01374

ALTA

PCDD & PCDF
EPA METHOD 1613A

Sample ID: Clarifier Sludge
Lab ID: 11213-001-SA
Matrix: Sludge
% Solids: 3.5

Date Received: 4/24/92
Date Extracted: 5/07/92
Sample Amount: 10.02 g

ICAL ID: I1613A
QC Lot: LC0429S
Units: pg/g

	Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
	2,3,7,8-TCDD	ND	0.59			
0	Total TCDD	20		0.83	>10:1	
	1,2,3,7,8-PeCDD	ND	1.1			
	Total PeCDD	16		1.58	>10:1	
	1,2,3,4,7,8-HxCDD	ND	1.6			
0.1	1,2,3,6,7,8-HxCDD	12 1.2		1.24	>10:1	
0.1	1,2,3,7,8,9-HxCDD	5.0 0.5		1.15	>10:1	
	Total HxCDD	80		1.25	>10:1	
.01	1,2,3,4,6,7,8-HpCDD	240 2.4		1.03	>10:1	
	Total HpCDD	420		1.03	>10:1	
.001	OCDD	3400 3.4		0.89	>10:1	B
0.1	2,3,7,8-TCDF	5.0 0.5		0.69 –	>10:1	
	Total TCDF	37		0.79	>10:1	
.05	1,2,3,7,8-PeCDF	2.5 0.125		1.57	4:1	
0.5	2,3,4,7,8-PeCDF	3.8 1.9		1.64	7:1	
	Total PeCDF	40		1.50	>10:1	
0.1	1,2,3,4,7,8-HxCDF	4.2 0.42		1.40	>10:1	
0.1	1,2,3,6,7,8-HxCDF	3.7 0.37		1.29	>10:1	
0.1	2,3,4,6,7,8-HxCDF	3.5 0.35		1.20	>10:1	
	1,2,3,7,8,9-HxCDF	ND	0.80			
	Total HxCDF	62		1.27	>10:1	
.01	1,2,3,4,6,7,8-HpCDF	32 0.32		1.01	>10:1	
	1,2,3,4,7,8,9-HpCDF	ND	0.59			
0	Total HpCDF	43		0.99	>10:1	
0	OCDF	150		0.90	>10:1	

Analyst: [illegible]

Total 11.48
Toxic Equivalency.

Reviewer: [illegible]

ALTA

PCDD & PCDF

EPA METHOD 1613A

Sample ID: Comp. #1 Sludge
Lab ID: 11470-001-C
Matrix: Sludge
% Solids: 3.1

Date Received: 7/21/92
Date Extracted: 7/31/92
Sample Amount: 10.06 g

ICAL ID: I1613A
QC Lot: LC0731S
Units: pg/g

	Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
	2,3,7,8-TCDD	ND	0.41			
○	Total TCDD	20		0.85	>10:1	
	1,2,3,7,8-PeCDD	ND	0.81			
	Total PeCDD	ND	9.5			I
	1,2,3,4,7,8-HxCDD	ND	1.5			
0.1	1,2,3,6,7,8-HxCDD	9.0 0.9		1.32	>10:1	
0.1	1,2,3,7,8,9-HxCDD	3.1 0.31		1.28	>10:1	
	Total HxCDD	65		1.20	>10:1	
.01	1,2,3,4,6,7,8-HpCDD	200 2.0		0.99	>10:1	
	Total HpCDD	370		1.02	>10:1	
.001	OCDD	2400 2.4		0.85	>10:1	
0.1	2,3,7,8-TCDF	6.8 0.68		0.79	>10:1	
	Total TCDF	14		0.77	>10:1	
.05	1,2,3,7,8-PeCDF	ND	1.1			
0.5	2,3,4,7,8-PeCDF	ND	0.66			
	Total PeCDF	ND	1.2			
0.1	1,2,3,4,7,8-HxCDF	ND	0.87			
0.1	1,2,3,6,7,8-HxCDF	ND	0.80			
0.1	2,3,4,6,7,8-HxCDF	1.3 0.13		1.40	3:1	
	1,2,3,7,8,9-HxCDF	ND	0.68			
	Total HxCDF	21		1.27	>10:1	
.01	1,2,3,4,6,7,8-HpCDF	23 0.23		1.10	>10:1	
	1,2,3,4,7,8,9-HpCDF	ND	1.3			
○	Total HpCDF	750		1.10	>10:1	
○	OCDF	100		1.00	>10:1	

Analyst: [signature] Total-6.65 Toxic Equivalency

Reviewer: [signature]

ALTA

PCDD & PCDF

EPA METHOD 8290

Sample ID: 1-15-Na Carbonate
Lab ID: 11470-004-SA
Matrix: Solid
% Solids: 100

Date Received: 7/21/92
Date Extracted: 7/22/92
Sample Amount: 10.11 g

ICAL ID: I1613A
QC Lot: LC0708S
Units: pg/g

Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
2,3,7,8-TCDD	ND	0.25			
Total TCDD	ND	0.25			
1,2,3,7,8-PeCDD	ND	0.40			
Total PeCDD	ND	2.1			I
1,2,3,4,7,8-HxCDD	ND	0.50			
1,2,3,6,7,8-HxCDD	ND	0.55			
1,2,3,7,8,9-HxCDD	ND	0.54			
Total HxCDD	ND	0.55			
1,2,3,4,6,7,8-HpCDD	ND	0.37			
Total HpCDD	ND	0.37			
OCDD	ND	0.39			
2,3,7,8-TCDF	ND	0.18			
Total TCDF	ND	0.18			
1,2,3,7,8-PeCDF	ND	0.33			
2,3,4,7,8-PeCDF	ND	0.33			
Total PeCDF	ND	0.33			
1,2,3,4,7,8-HxCDF	ND	0.19			
1,2,3,6,7,8-HxCDF	ND	0.17			
2,3,4,6,7,8-HxCDF	ND	0.19			
1,2,3,7,8,9-HxCDF	ND	0.23			
Total HxCDF	ND	0.23			
1,2,3,4,6,7,8-HpCDF	ND	0.19			
1,2,3,4,7,8,9-HpCDF	ND	0.28			
Total HpCDF	ND	0.28			
OCDF	ND	0.30			

Analyst:

Reviewer:

ALTA

PCDD & PCDF
EPA METHOD 1613A

Sample ID: 1-17-Kraft HD
Lab ID: 11470-006-SA
Matrix: Pulp

Date Received: 7/21/92
Date Extracted: 7/27/92
Sample Amount: 15.02 g

ICAL ID: I1613A
QC Lot: LC0716P
Units: pg/g

Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
2,3,7,8-TCDD	ND	0.46			
Total TCDD	4.3		0.87	>10:1	
1,2,3,7,8-PeCDD	ND	0.59			
Total PeCDD	ND	7.6			I
1,2,3,4,7,8-HxCDD	ND	0.43			
1,2,3,6,7,8-HxCDD	3.0		1.39	>10:1	
1,2,3,7,8,9-HxCDD	ND	1.1			
Total HxCDD	22		1.25	>10:1	
1,2,3,4,6,7,8-HpCDD	150		1.06	>10:1	
Total HpCDD	240		1.09	>10:1	
OCDD	1000		0.90	>10:1	
2,3,7,8-TCDF	1.1		0.80	9:1	
Total TCDF	2.6		0.77	9:1	
1,2,3,7,8-PeCDF	ND	0.41			
2,3,4,7,8-PeCDF	ND	0.42			
Total PeCDF	ND	0.67			
1,2,3,4,7,8-HxCDF	ND	0.35			
1,2,3,6,7,8-HxCDF	ND	0.32			
2,3,4,6,7,8-HxCDF	ND	0.40			
1,2,3,7,8,9-HxCDF	ND	0.46			
Total HxCDF	2.0		1.31	8:1	
1,2,3,4,6,7,8-HpCDF	4.5		1.15	>10:1	
1,2,3,4,7,8,9-HpCDF	ND	0.89			
Total HpCDF	4.5		1.15	>10:1	
OCDF	23		0.88	>10:1	

Analyst: [illegible]

Reviewer: [illegible]

ALTA

PCDD & PCDF
EPA METHOD 1613A

Sample ID: 1-17-Digester
Lab ID: 11470-007-SA
Matrix: Pulp

Date Received: 7/21/92
Date Extracted: 7/27/92
Sample Amount: 15.00 g

ICAL ID: I1613A
QC Lot: LC0716P
Units: pg/g

Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
2,3,7,8-TCDD	ND	0.28			
Total TCDD	ND	0.28			
1,2,3,7,8-PeCDD	ND	0.53			
Total PeCDD	ND	4.0			I
1,2,3,4,7,8-HxCDD	ND	0.45			
1,2,3,6,7,8-HxCDD	ND	0.42			
1,2,3,7,8,9-HxCDD	ND	0.51			
Total HxCDD	ND	0.51			
1,2,3,4,6,7,8-HpCDD	2.3		1.12	8:1	
Total HpCDD	3.5		1.06	8:1	
OCDD	18		0.86	>10:1	
2,3,7,8-TCDF	ND	0.20			
Total TCDF	ND	0.20			
1,2,3,7,8-PeCDF	ND	0.32			
2,3,4,7,8-PeCDF	ND	0.35			
Total PeCDF	ND	0.35			
1,2,3,4,7,8-HxCDF	ND	0.17			
1,2,3,6,7,8-HxCDF	ND	0.15			
2,3,4,6,7,8-HxCDF	ND	0.17			
1,2,3,7,8,9-HxCDF	ND	0.20			
Total HxCDF	ND	0.20			
1,2,3,4,6,7,8-HpCDF	ND	0.20			
1,2,3,4,7,8,9-HpCDF	ND	0.27			
Total HpCDF	ND	0.27			
OCDF	ND	0.74			

Analyst: [illegible]

Reviewer: [illegible]

ALTA

PCDD & PCDF
EPA METHOD 1613A

Sample ID: Comp. #1 Leachate
Lab ID: 11470-001-A
Matrix: Leachate

Date Received: 7/21/92
Date Extracted: 8/04/92
Sample Amount: 1.0 L

ICAL ID: I1613A
QC Lot: LC0804A
Units: pg/L

Compound	Conc.	D.L.	Ratio	S/N Ratio	Qualifier
2,3,7,8-TCDD	ND	2.6			
Total TCDD	ND	2.6			
1,2,3,7,8-PeCDD	ND	6.4			
Total PeCDD	ND	180			I
1,2,3,4,7,8-HxCDD	ND	5.6			
1,2,3,6,7,8-HxCDD	ND	5.7			
1,2,3,7,8,9-HxCDD	ND	6.7			
Total HxCDD	ND	6.7			
1,2,3,4,6,7,8-HpCDD	ND	6.0			
Total HpCDD	ND	6.0			
OCDD	ND	31			I
2,3,7,8-TCDF	ND	1.4			
Total TCDF	ND	1.4			
1,2,3,7,8-PeCDF	ND	2.3			
2,3,4,7,8-PeCDF	ND	2.8			
Total PeCDF	ND	12			
1,2,3,4,7,8-HxCDF	ND	1.9			
1,2,3,6,7,8-HxCDF	ND	1.8			
2,3,4,6,7,8-HxCDF	ND	1.8			
1,2,3,7,8,9-HxCDF	ND	2.4			
Total HxCDF	ND	2.4			
1,2,3,4,6,7,8-HpCDF	ND	2.4			
1,2,3,4,7,8,9-HpCDF	ND	3.6			
Total HpCDF	ND	3.6			
OCDF	ND	7.6			

Analyst: [illegible]

Reviewer: [illegible]

TRIANGLE LABORATORIES OF RTP, INC.
PCDD/PCDF 1613A ANALYSIS (c)

08/15/92

FILE NAME.:	S923502	SAMPLE ID.:	*		
PROJECT...:	21469R	CLIENT NAME...:	MENASHA CORPORATION		
CLIENT PROJECT:	n/a				
TLI ID....:	58-83/1-4	ANALYSIS DATE.:	08/11/92	CLIENT CODE..:	MSC01
COLLECTED.:	n/a	ANALYSIS TIME.:	18:41	DILUTION.....:	n/a
RECEIVED..:	07/21/92	ANALYST.....:	VC	BLANK FILE...:	S923501
MATRIX....:	SOLID	INSTRUMENT....:	S	% LIPID.....:	n/a
EXT. SIZE.:	130.900 g	GC COLUMN.....:	DB-5	% SOLIDS.....:	7.05
ADJ. SIZE.:	9.230 g	GC COLUMN ID..:	2999361	% MOISTURE...:	92.95
EXT. DATE.:	08/07/92	ICAL NAME.....:	SC51312	ORIGIN.....:	n/a
EXT. VOL..:	20.00 ul	ICAL DATE.....:	01/31/92	CONTRACT.....:	n/a
SPIKE FILE:	SP161V2S	CONCAL NAME...:	S923495	SAS NUMBER...:	n/a
INJECT VOL:	2.0 ul	CONCAL DATE...:	08/11/92	EPISODE.....:	n/a

	NAME	CONC(NG/KG)	NUMBER	DL	RATIO	RRT	FLAGS
1	2378-TCDD	1.1	1.1		0.72	1.001	
	12378-PeCDD	ND		0.9			
	123478-HxCDD	ND		1.8			
0.1	123678-HxCDD	9.6	0.96		1.33	1.000	
0.1	123789-HxCDD	4.7	0.47		1.32	1.010	
.01	1234678-HpCDD	217	2.17		1.02	1.000	
.001	OCDD	2670	2.67		0.85	1.000	B
0.1	2378-TCDF	10.4	1.04		0.77	1.001	
	12378-PeCDF	ND		0.8			
0.5	23478-PeCDF	0.61	0.305		1.70	1.001	
0.1	123478-HxCDF	2.0	0.2		1.15	1.000	
	123678-HxCDF	ND		0.9			
	234678-HxCDF	ND		1.1			
	123789-HxCDF	ND		1.4			
.01	1234678-HpCDF	23.6	0.236		0.91	1.000	
	1234789-HpCDF	ND		2.3			
	OCDF	169			0.88	1.005	
	TOTAL TCDD	35.7	4		0.76		
	TOTAL PeCDD	5.4	2		1.63		
	TOTAL HxCDD	86.1	5		1.29		
	TOTAL HpCDD	408	2		1.03		
	TOTAL TCDF	24.4	7		0.80		
	TOTAL PeCDF	2.8	2		1.56		
	TOTAL HxCDF	23.1	4		1.15		
	TOTAL HpCDF	91.1	2		0.93		

* 1-13, 2-14, 3-15, & 4-16 CLARIFIER #1

Reviewed By: KU 8/15/92

161V_RPT 4.03, LARS 5.00

Total 9.151

Toxic Equivalency

Sample ID: WEAKLIQUOR SODA ASH W/CL2 Lab ID: 9405176-05

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	3,900	mg/kg as recd.	05/31/94	WS	EPA 9252	180
Sulfate	3,300	mg/kg as recd.	06/01/94	MBR	EPA 375.4	800
Potassium	55,000	mg/kg as recd.	06/01/94	MBR	EPA 7610	4

Sample ID: WEAKLIQUOR SODA ASH NO CL2 Lab ID: 9405176-06

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	4,100	mg/kg as recd.	05/31/94	WS	EPA 9252	180
Sulfate	4,600	mg/kg as recd.	06/01/94	MBR	EPA 375.4	800
Potassium	80,000	mg/kg as recd.	06/01/94	MBR	EPA 7610	4

Sample ID: WEAKLIQUOR SLIPDT NO CL2 Lab ID: 9405176-07

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	2,400	mg/kg as recd.	05/31/94	WS	EPA 9252	180
Sulfate	6,500	mg/kg as recd.	06/01/94	MBR	EPA 375.4	800
Potassium	172,000	mg/kg as recd.	06/01/94	MBR	EPA 7610	4

Sample ID: FUEL OIL 51994 Lab ID: 9405176-08

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	18,100	BTU/lb as recd	05/26/94	CJK	ASTM D240-85	N/A
Chloride	BDL	mg/kg as recd.	05/31/94	WS	EPA 9252	40
Fixed Solids (Ash)	0.11	% of sample	05/26/94	WS	APHA 2540B/E	N/A
Sulfate	BDL	mg/kg as recd.	06/01/94	MBR	EPA 375.4	160
Total Solids	0.41	% of sample	05/26/94	WS	APHA 2540 B.	N/A
Potassium	0.97	mg/kg dry wt.	06/01/94	MBR	EPA 7610	0.17

Sample ID: FUEL OIL 05994 Lab ID: 9405176-09

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	18,100	BTU/lb as recd	05/26/94	CJK	ASTM D240-85	N/A
Chloride	BDL	mg/kg as recd.	05/31/94	WS	EPA 9252	40
Fixed Solids (Ash)	0.72	% of sample	05/26/94	WS	APHA 2540B/E	N/A
Sulfate	BDL	mg/kg as recd.	06/01/94	MBR	EPA 375.4	160
Total Solids	0.43	% of sample	05/26/94	WS	APHA 2540 B.	N/A
Potassium	5.8	mg/kg dry wt.	06/01/94	MBR	EPA 7610	0.02

BDL = Below Detection Limit

MDL = Method Detection Limit

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WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01410

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys
Re: Miscellaneous Samples

DATE: June 21, 1994. Revised July 20, 1994.

ANALYSIS OF: Miscellaneous Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on June 13, 1994.

Sample ID: 60994 Weak Liquor Lab ID: 9406106-01 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	670	mg/kg as recd.	06/20/94	MBR	EPA 9252	100
Sulfate	BDL	mg/kg as recd.	06/20/94	MBR	EPA 375.4	400
Total Solids	9.88	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	11,000	mg/kg as recd.	06/20/94	MBR	EPA 7610	4

Sample ID: 61094 Weak Liquor Lab ID: 9406106-02 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	470	mg/kg as recd.	06/20/94	MBR	EPA 9252	100
Sulfate	1,200	mg/kg as recd.	06/20/94	MBR	EPA 375.4	400
Total Solids	11.0	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	30,000	mg/kg as recd.	06/20/94	MBR	EPA 7610	4

Sample ID: 6994 Wood Chips Lab ID: 9406106-03 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	49	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	BDL	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	40
Total Solids	61.7	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	340	mg/kg dry wt.	06/20/94	MBR	EPA 7610	0.2

Sample ID: 61094 Wood Chips Lab ID: 9406106-04 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	29	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	BDL	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	40
Total Solids	69.1	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	97	mg/kg dry wt.	06/20/94	MBR	EPA 7610	0.2

BDL = Below Detection Limit
MDL = Method Detection Limit

Printed on Recycled Paper

TEST RESULTS ON SPENT LIQUOR

DOCUMENT #38

WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

DESCRIPTION

The liquor pond sludge composite was a dark brown liquid sludge. The sample was separated into the solid and liquid portions using centrifugation and vacuum filtration through 0.45 μm membrane filters. The sample was extremely difficult to separate.

A 64.1 solid sample was finally separated. The liquid was placed in the refrigerator. 124.2 ml of 0.5M Acetic Acid were added to adjust the pH from 9.0 to 5.0. After extraction, the leachate was again separated using centrifugation, then vacuum filtration through 0.45 μm membrane filters.

The original sample contained 27.26% total solids, of which 39.25% were volatile and 60.75% were ash. The sample also contained <0.05 mg/kg PCB and 362 mg/kg sulfite.

DATA SUMMARY FOR PCB ANALYSIS BY ECD GAS CHROMATOGRAPHY
Project #0293014.

Client #:	Descript.	Lab I.D.	Quant.	Unit	AROCHLOR: 1016	1221	1232	1242	1248	1254	1260	MDL	
22293	#1 PM Medium	0293014-1	9.997	g	ND	ND	ND	ND	ND	ND	ND	0.46	ug/g (ppm)
22392001	Weir	0293014-2	0.97	L	ND	ND	ND	ND	ND	ND	ND	4.74	ug/L (ppb)
22393003	Weir	0293014-3	0.99	L	ND	ND	ND	ND	ND	ND	ND	4.65	ug/L (ppb)
22393	Sludge	0293014-4	0.42	L	ND	ND	ND	ND	ND	ND	ND	10.95	ug/L (ppb)
2293	Spent Liquor	0293014-5	0.10	L	ND	ND	ND	ND	ND	ND	ND	45.99	ug/L (ppb)

Instrument Minimum Detection Limit: 4.60 ug/mL

ND = Not detected at or above the MDL.

MEN01383

Menasha, Corporation

Otsego, Michigan

Analytical Results of

Samples taken March 1, 1983

Parameter	Soil Sample O.W. #1 mg/kg	Soil Sample O.W. #2 mg/kg	Liquor Sample mg/l
Alkalinity (as $CaCO_3$)	2,520	1,670	19,700
Chlorides	<50	<50	250
C.O.D.	3,500	6,000	30,300
T.O.C.	350	565	10,600
Phenols	<0.1	<0.1	55.2
Sulfate	1,900	2,600	1,200
Sulfur, total	720	540	350
Sodium	230	410	5,750
Total Solids (%)	84.72	82.46	5.80
Volatile Solids (%)	1.30	0.94	2.90
Ash (%)	83.42	81.52	2.90

MEN01385

A & L AGRICULTURAL LABORATORIES, INC.

411 N. Third St ● Memphis, TN 38105-2723 ● (901) 527-2780
ACCT # - #

REPORT NUMBER
282-003A

October 8, 1984

Menasha Corporation
P.O. Box 155
Otsego, MI 49078
ATTN: Keith B. Kling

DATE REC'D - 8-24-84

LABORATORY NUMBER:	46818	46819	46820
SAMPLE IDENTIFICATION:	Leachate of #1 Liquor	Leachate of #2 Liquor	Leachate of #3 Liquor
ANALYSIS:			
Arsenic (mg/l)	< 0.01	< 0.01	< 0.01
Barium (mg/l)	0.74	0.58	1.43
Cadmium (mg/l)	0.020	0.020	0.045
Total Chromium (mg/l)	0.03	0.04	0.15
Lead (mg/l)	0.03	0.02	0.07
Mercury (mg/l)	0.0099	0.0042	0.0042
Selenium (mg/l)	0.001	0.001	0.001
Silver (mg/l)	0.02	0.02	0.05

NOTE: Organics will follow on separate report. Samples were analyzed by methods in SW-846, Test Methods for Evaluating Solid Waste, 1982.

A & L ENVIRONMENTAL SERVICES

Sarah Chrestman

Sarah Chrestman, Chemist

SC/csd

1773

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Formerly: Burmah Technical Services, Inc.

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego MI 49078

03-05-90

Sample No.: 69169

Sample Description: #020590-RCYC

Date Taken: Unknown

Date Received: 02-09-90

Ash	49	%
BTU (dry weight)	4800	/lb
Solids, Total	56	%

* Amended Report

Christopher P. Jock
Divisional Manager

MEN01387

NATIONAL ENVIRONMENTAL TESTING, INC.

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Formerly Burmah Technical Services, Inc

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego MI 49078

03-29-90

Sample No.: 70086

Page 3

Sample Description: #3190 INTLQ

Date Taken: Unknown

Date Received: 03-06-90

Ash	11	%
BTU	6000 (Dry weight)	/lb
Solids, Total	29	%

Christopher P. Jock
Divisional Manager

MEN01388

PREIN & NEWHOF, P.C.

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BASIL J. ANDRESS JR. R.L.S.
LARRY D. STEHOUWER, P.E.

May 22,1990
77129L

Mr. John Bonham
Menasha Corporation
P.O. Box 155
Otsego, Mi 49078

Re: Black Liquior samples received 5/7/90
Additional Testing requested 5/11/90

LABORATORY RESULTS

	tank farm INTERMEDIATE LIQUOR Tank	DIGESTER LIQUOR transfer tank 5/4/90	tank farm weak Liquor tank 5/4/90
Sample #	050490 5/4/90 INTLQ	050490 TranSLIQ	050490 WKLQTK
Lab Log #	1990	1991	1992
**Sulfate,mg/L	2,109	354	831
Total Magnesium,mg/L	125	27	60
Total Aluminum,mg/L	30	8	15
Total Barium,mg/L	8	<5	<5
Total Cadmium,mg/L	0.18	0.09	0.09
Total Chromium,mg/L	0.4	0.2	0.3
Total Iron,mg/L	15	14	10
Total Lead,mg/L	2.0	2.9	1.7
Total Manganese,mg/L	32.4	12.1	17.4
Total Nickel,mg/L	0.2	<0.2	<0.2
Total Zinc,mg/L	3.5	6.1	3.2
*Total Boron,mg/L	7.1	2.4	4.1
Total Phosphorus, mg/L as P	115	40	70
Bromide,mg/L	200	262	130
Fluoride,mg/L	160	160	160

*Testing performed by FTC&H Analytical Services,Grand Rapids, Mi
**Testing performed by Galbraith Lab, Knoxville,TN

PREIN & NEWHOF
Environmental Laboratory

Jane Hoch

Jane Hoch
Laboratory Director

Gary

PREIN & NEWHOF, P.C.

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LARRY D STEHOUWER PE

MEN01389

June 18,1990
77129L

Mr. John Bonham
Menasha Corporation
P.O. Box 155
Otsego, Mi 49078

Re: Black Liquor samples rec'd 6/11/90

LABORATORY RESULTS

Sample #	06590 WKLQ	053190 WKLQ
Lab Log #	2654	2655
Chloride,mg/L	<50	<53
Total Magnesium,mg/L	97	75
Sulfate,mg/L	789	518
Total Silicon,mg/L	85.0	68.8
Total Potassium,mg/L	1,740	1,235

PREIN & NEWHOF

Jane Hoch

Jane Hoch
Laboratory Director

MEN01390

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Pontiac Division
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Fax (313) 334-8486

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego MI 49078

06-13-90

DATE RECEIVED: 04-27-90

Sample Number\ Parameter	Sample Description\ Results		Date & Time Taken\Units
72776	042290RCYL52		unknown
Ash	23.		%
BTU	4800.	*	/lb
Sulfate	300.		mg/Kg
Total Halogens	<340.		mg/Kg
Solids, Total	52.		%
72777	OILMILL423		unknown
Ash	6.0		%
BTU	17,200.	*	/lb
Sulfate	8500.		mg/Kg
Total Halogens	<330.		mg/Kg
Solids, Total	96.		%
72778	042390INTMS		unknown
Ash	12.		%
BTU	5500.	*	/lb
Sulfate	380.		mg/Kg
Total Halogens	<440.		mg/Kg
Solids, Total	25.		%

* Sample was dried prior to analysis.

Bruce E. Brown
Project Manager

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MEN01391

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego MI 49078

06-28-90

Page 1

DATE RECEIVED: 06-01-90

Sample Number\ Parameter	Sample Description\ Results	Date & Time Taken\Units
74288	#053190-RCYCL	Unknown
Ash	26.	%
BTU	4300. *	/lb
Solids, Total	54.	%

* Sample dried prior to analysis.

Susan K Scott
Susan K. Scott
Project Manager

MEN01392

NET NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

07/19/1991

Job No.: 91.3893
Sample No.: 93104

Sample Description: #062791 Int Liq 28% Good Run

Date Taken:

Date Received: 07/11/1991

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
Ash	12.	%	07/15/1991	cms	D482 (2)
BTU	5300.*	/lb	07/18/1991	akm	D240 (2)
Solids, Total	26.	%	07/15/1991	cms	160.3 (3)

*Sample dried prior to analysis.

this is 6/27/91 sample
of Intermediate liquor from
the good burn attached is
the Recycle liquor. No significant difference.
Although the BTU's are both
above 5000.

Bruce E. Brown
Project Manager

GARY

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MEN01393

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

06/14/1991

Job No.: 91.3144
Sample No.: 91479

Sample Description: Recycle Tank 05/31

Date Taken: 05/31/1991

Date Received: 06/04/1991

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
Ash	23.	%	06/07/1991	mab	D482 (2)
BTU	5100.*	/lb	06/13/1991	mab	D240 (2)
Solids, Total	58.	%	06/07/1991	mab	160.3 (3)

*Sample dried prior to analysis.

Bruce E. Brown
Project Manager

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METHODOLOGY

(1) EPA SW846, "Test Methods for Evaluating Solid Wastes".

(2) ASTM, "American Society for Testing Materials".

(3) EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes".

(4) "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.

(5) 40 CFR, Part 136; reprinted in EPA 600/4-82-057, "Methods for Organic Analyses of Municipal and Industrial Wastewaters."

(6) 40 CFR, Part 763;

(7) "Standard Methods for the Examination of Water and Wastewater", 16th Edition, 1985.

(8) Methods of Air Sampling and Analysis, 2nd. Edition.

UNITS OF CONVERSION

ppm (part per million) = mg/Kg, mg/L, ug/g, ug/ml

ppb (part per billion) = ug/Kg, ug/L

% = ppm divided by 10,000

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MEN01395

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

07/19/1991

Job No.: 91.3893
Sample No.: 93105

Sample Description: #062791 Recycle Tank 55% Good Run

Date Taken:

Date Received: 07/11/1991

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
Ash	23.	%	07/15/1991	cms	D482 (2)
BTU	5000.*	/lb	07/18/1991	akm	D240 (2)
Solids, Total	53.	%	07/15/1991	cms	160.3 (3)

*Sample dried prior to analysis.

Bruce E. Brown
Project Manager

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1700 Har
Auburn Hills, MI 48326

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MEN01396

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

12/11/1991

Job No.: 91.6380
Sample No.: 98845

Sample Description: #111291 Recycle Liquor

Date Taken:

Date Received: 11/20/1991

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
Ash	21.	%	11/26/1991	cms	D482 (2)
BTU	5800.	/lb	12/02/1991	akm	D240 (2)

*Sample dried prior to BTU analysis

Bruce E. Brown
Project Manager

PREIN & NEWHOF, P.C.

ENGINEERS — SURVEYORS — ENVIRONMENTAL & SOILS LABORATORIES

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MEN01397

January 24, 1992
77129L

Mr. John Bonham
Menasha Corporation
P.O. Box 155
Otsego, MI 49078

Re: Weak Liquor sample received 11/20/91

LABORATORY RESULTS

Sample #	Weak Liquor 11291
Lab Log #	5912
*Chloride, mg/L (Total Halides, as Chloride)	103
Total Potassium, mg/L	1,740
Total Magnesium, mg/L	68.4
**Silicon, mg/L	47
*Sulfate, mg/L as SO4	1,110

* Analysis performed by Galbraith Labs
**Analysis performed by FTC&H Labs

PREIN & NEWHOF
Environmental Laboratory

Robert Erickson
Laboratory Director

MEN01398

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

07/16/1993

Job No.: 93.03728
Sample No.: 133594

Sample Description: #6793 Liquor 55 Density 06/07

Date Taken:

Date Received: 06/28/1993

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
Ash	24	%	07/15/1993	akm	D482 (2)
BTU	5200	/lb	07/15/1993	akm	D240 (2)
Solids, Total	60	%	07/02/1993	akm	160.3 (3)

Susan K. Scott
Project Manager

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METHODOLOGY

(1) EPA SW846, "Test Methods for Evaluating Solid Wastes".

(2) ASTM, "American Society for Testing Materials".

(3) EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes".

(4) "Standard Methods for the Examination of Water and Wastewater", 17th Edition, 1989.

(5) 40 CFR, Part 136; reprinted in EPA 600/4-82-057, "Methods for Organic Analyses of Municipal and Industrial Wastewaters."

(6) 40 CFR, Part 763;

(7) "Standard Methods for the Examination of Water and Wastewater", 16th Edition, 1985.

(8) Methods of Air Sampling and Analysis, 2nd. Edition.

(9) DNR, "Michigan Department of Natural Resources Laboratory Manual for Wastewater Treatment Plant Operators".

(10) EPA Procedures Manual for Groundwater Monitoring at Solid Waste Disposal Facilities EPA/530/SW-611.

(11) EPA 600/4-91/010, "Methods for the Determination of Metals in Environmental Samples." Appendix A, March 1987.

(12) "Orion Guide to Water and Wastewater Analysis." Form WeWWG/5880, p.5, Orion Research, Inc., Cambridge, MA.

(13) EPA 600/4-88-039 (Revised July 1991), "Methods for the Determination of Organic Compounds in Drinking Water."

UNITS OF CONVERSION

ppm (part per million) = mg/kg, mg/L, ug/g, ug/mL

ppb (part per billion) = ug/kg, ug/L

% = ppm divided by 10,000

OCEAN GROUP

MEN01400

PREIN & NEWHOF, P.C.

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ROBERT F GOODHEART PE
KENNETH A BOSMA PE

July 29,1993
77129L

Mr Len Myers
Menasha Corporation
320 North Farmer St
Otsego, MI 49078

Re Weak Liquior Sample
Received 7/2/93

LABORATORY RESULTS

Sample	Weak Liquior-61893
Lab Log #	2731
*Chloride.mg/L (Total Halides as Chloride)	25
*Silicon.mg/L	39
*Sulfate.mg/L	1,065
Total Potassium.mg/L	810
Total Magnesium.mg/L	36
Total Sodium.mg/L	8,900
Sodium Carbonate.mg/L	6,563
Solids.mg/L	69
Ash.mg/L	28
Ash.% of Solids	40 6

*Analysis performed by Galbraith Labs

PREIN & NEWHOF
Environmental Laboratory

Robert Enckson
Laboratory Director

MEN01401

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

10/08/1993

Job No.: 93.05599
Sample No.: 137975

Sample Description: #91793 Recycle Liquor

Date Taken:

Date Received: 09/21/1993

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
BTU	5600	/lb	10/06/1993	cab	D240 (2)

Bruce E. Brown
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

MEN01402

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1700 Harmon Road
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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

10/20/1993

Job No.: 93.05921
Sample No.: 138741

Sample Description: 10193 Recycle Liquor

Date Taken:

Date Received: 10/05/1993

Parameter	Result	Unit	Date Analyzed	Lab Tech.	Methodology
BTU	4900	/lb	10/19/1993	akm	D240 (2)
Sulfur, Total	0.62	%	10/19/1993	dds	D129 (2)

Susan K. Scott
Project Manager

MEN01403

NATIONAL ENVIRONMENTAL TESTING, INC.

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(800) 526-4951

ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

02/03/1994

Job No.: 94.00271
Sample No.: 144497

Sample Description: #11394-Recycle Liquor

Date Taken:

Date Received: 01/19/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Ash	73	%		01/26/1994	cab	D482 (2)	
BTU	5,400	/lb		01/31/1994	cab	D240 (2)	
Solids, Total	56	%		01/24/1994	cab	160.3 (3)	
Sulfur, Total	0.37	%	01/31/1994	01/31/1994	dds	D129 (2)	

Results reported on a dry weight basis.

Bruce E. Brown
Project Manager

OCEAN GROUP

MEN01404

NATIONAL ENVIRONMENTAL TESTING, INC.

Auburn Hills Division
1700 Harmon Road
Auburn Hills, MI 48326

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

02/03/1994

Job No.: 94.00271
Sample No.: 144499

Sample Description: #102793-Recycle

Date Taken:

Date Received: 01/19/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Ash	76	%		01/26/1994	cab	D482 (2)	
BTU	5,200	/lb		01/31/1994	cab	D240 (2)	
Solids, Total	52	%		01/24/1994	cab	160.3 (3)	
Sulfur, Total	0.41	%	01/31/1994	01/31/1994	dds	D129 (2)	

Results reported on a dry weight basis.

Bruce E. Brown
Project Manager

OCEAN GROUP

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

02/03/1994

Job No.: 94.00271
Sample No.: 144498

Sample Description: #100193-Recycle

Date Taken:

Date Received: 01/19/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Ash	73	%		01/26/1994	cab	D482 (2)	
BTU	5,300	/lb		01/31/1994	cab	D240 (2)	
Solids, Total	52	%		01/24/1994	cab	160.3 (3)	
Sulfur, Total	0.41	%	01/31/1994	01/31/1994	dds	D129 (2)	

Results reported on a dry weight basis.

Bruce E. Brown
Project Manager

MEN01406

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

02/03/1994

Job No.: 94.00271
Sample No.: 144500

Sample Description: #113093-Recycle

Date Taken:

Date Received: 01/19/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Ash	70	%		01/26/1994	cab	D482 (2)	
BTU	5,100	/lb		01/31/1994	cab	D240 (2)	
Solids, Total	50	%		01/24/1994	cab	160.3 (3)	
Sulfur, Total	0.71	%	01/31/1994	01/31/1994	dds	D129 (2)	

Results reported on a dry weight basis.

Bruce E. Brown
Project Manager

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ANALYTICAL REPORT

Gary Roys
MENASHA CORPORATION
OTSEGO MILL
320 N Farmer Street
Otsego, MI 49078

04/25/1994

Job No.: 94.02190
Sample No.: 148942

Sample Description: #032994 Recycle 55.9% 03/29

Date Taken: 03/29/1994

Date Received: 04/13/1994

Parameter	Result	Unit	Date Prepared	Date Analyzed	Lab Tech.	Methodology	Note
Ash	41	%		04/20/1994	akm	D482 (2)	
BTU	5000	/lb		04/22/1994	cab	D240 (2)	
olids, Total	57	%		04/20/1994	akm	160.3 (3)	
lfide, Total	<2.0	mg/kg		04/19/1994	dlc	376.2 (3)	

Bruce E. Brown
Project Manager

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX: 616-399-6185

MEN01408

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: June 1, 1994

ANALYSIS OF: Miscellaneous Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on May 24, 1994.

Sample ID: WOODCHIPS 051994 Lab ID: 9405176-01

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	100	mg/kg dry wt.	05/31/94	WS	EPA 9252	7
Sulfate	BDL	mg/kg dry wt.	06/01/94	MBR	EPA 375.4	32
Total Solids	59.6	% of sample	05/25/94	WS	APHA 2540 B.	N/A
Potassium	740	mg/kg dry wt.	06/01/94	MBR	EPA 7610	18

Sample ID: SLI PRODUCT Lab ID: 9405176-02

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	4,200	mg/kg dry wt.	05/31/94	WS	EPA 9252	100
Sulfate	54,200	mg/kg dry wt.	06/01/94	MBR	EPA 375.4	400
Total Solids	100	% of sample	05/25/94	WS	APHA 2540 B.	N/A
Potassium	33,000	mg/kg dry wt.	06/01/94	MBR	EPA 7610	2

Sample ID: SODAASH Lab ID: 9405176-03

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	1,500	mg/kg dry wt.	05/31/94	WS	EPA 9252	100
Sulfate	2,700	mg/kg dry wt.	06/01/94	MBR	EPA 375.4	400
Total Solids	100	% of sample	05/25/94	WS	APHA 2540 B.	N/A
Potassium	190	mg/kg dry wt.	06/01/94	MBR	EPA 7610	2

Sample ID: WEAKLIQUOR SLIPDT W/CL2 Lab ID: 9405176-04

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	3,300	mg/kg as recd.	05/31/94	WS	EPA 9252	180
Sulfate	4,900	mg/kg as recd.	06/01/94	MBR	EPA 375.4	800
Potassium	170,000	mg/kg as recd.	06/01/94	MBR	EPA 7610	4

BDL = Below Detection Limit

MDL = Method Detection Limit

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MEN01411

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: June 21, 1994

ANALYSIS OF: Miscellaneous Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on June 13, 1994.

Sample ID: 60994 Weak Liquor Lab ID: 9406106-01 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	670	mg/kg as recd.	06/20/94	MBR	EPA 9252	100
Sulfate	BDL	mg/kg as recd.	06/20/94	MBR	EPA 375.4	400
Total Solids	9.88	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	11,000	mg/kg as recd.	06/20/94	MBR	EPA 7610	4

Sample ID: 61094 Weak Liquor Lab ID: 9406106-02 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	470	mg/kg as recd.	06/20/94	MBR	EPA 9252	100
Sulfate	1,200	mg/kg as recd.	06/20/94	MBR	EPA 375.4	400
Total Solids	11.0	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	30,000	mg/kg as recd.	06/20/94	MBR	EPA 7610	4

Sample ID: 6994 Wood Chips Lab ID: 9406106-03 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	49	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	BDL	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	40
Total Solids	61.7	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	340	mg/kg dry wt.	06/20/94	MBR	EPA 7610	0.2

Sample ID: 61094 Wood Chips Lab ID: 9406106-04 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	29	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	BDL	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	40
Total Solids	69.1	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	97	mg/kg dry wt.	06/20/94	MBR	EPA 7610	0.2

BDL = Below Detection Limit

MDL = Method Detection Limit

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Sample ID: 60994 Soda Ash Lab ID: 9406106-05 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	1,300	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	BDL	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	400
Total Solids	100	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	120	mg/kg dry wt.	06/20/94	MBR	EPA 7610	2

Sample ID: 61094 Soda Ash Lab ID: 9406106-06 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	890	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	2,800	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	400
Total Solids	99.9	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	450	mg/kg dry wt.	06/20/94	MBR	EPA 7610	2

Sample ID: 60994 SLI Pdt Lab ID: 9406106-07 Collected: 06/09/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	6,300	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	2,100	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	400
Total Solids	100	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	19,000	mg/kg dry wt.	06/20/94	MBR	EPA 7610	2

Sample ID: 61094 SLI Pdt Lab ID: 9406106-08 Collected: 06/10/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	3,200	mg/kg dry wt.	06/20/94	MBR	EPA 9252	10
Sulfate	26,000	mg/kg dry wt.	06/20/94	MBR	EPA 375.4	400
Total Solids	100	% of sample	06/15/94	WS	APHA 2540 B.	N/A
Potassium	26,000	mg/kg dry wt.	06/20/94	MBR	EPA 7610	2

BDL = Below Detection Limit

MDL = Method Detection Limit

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MEN01413

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: July 15, 1994

ANALYSIS OF: Liquid Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on July 5, 1994.

Sample ID: Recycle Liquor 062994 Lab ID: 9407020-01 Collected: 06/29/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,970	BTU/lb as recd	07/14/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	5,590	BTU/lb dry wt.	07/14/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	47.3	% of tot solid	07/08/94	WS	APHA 2540B/E	N/A
Total Solids	53.1	% of sample	07/08/94	WS	APHA 2540 B.	N/A
Total Sulfur	0.21	% by wt	07/14/94	CJK	EPA 5050	0.0042

MDL = Method Detection Limit

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MEN01414

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: October 6, 1994

ANALYSIS OF: Liquid Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on September 23, 1994.

Sample ID: Weak Liquor Lab ID: 9409193-01

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	NONE	BTU/lb as recd	10/06/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	5.38	% of sample	09/27/94	WS	APHA 2540B/E	N/A
Total Solids	11.6	% of sample	09/27/94	WS	APHA 2540 B.	N/A

mple ID: Recycle Liquor Lab ID: 9409193-02 Collected: 09/15/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	1,990	BTU/lb as recd	10/06/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	25.3	% of sample	09/27/94	WS	APHA 2540B/E	N/A
Total Solids	66.4	% of sample	09/27/94	WS	APHA 2540 B.	N/A

MDL = Method Detection Limit

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3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX: 616-399-6185

MEN01415

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: October 31, 1994

ANALYSIS OF: Waste Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on October 3, 1994.

Sample ID: Lagoon (Wk Lq) Lab ID: 9410015-01 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	45,100	mg/kg dry wt.	10/07/94	WS	EPA 9252	5,000
Density	8.5	lbs/gallon	10/27/94	MBR	APHA 2710 F.	N/A
Total Solids	1.96	% of sample	10/24/94	WS	APHA 2540 B.	N/A

Sample ID: Recycle Liquor Lab ID: 9410015-02 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,390	BTU/lb as recd	10/17/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	4,025	BTU/lb dry wt.	10/17/94	CJK	ASTM D240-85	N/A
Chloride	6,190	mg/kg dry wt.	10/07/94	WS	EPA 9252	170
Fixed Solids (Ash)	43.5	% of tot solid	10/05/94	WS	APHA 2540B/E	N/A
Total Solids	59.4	% of sample	10/06/94	WS	APHA 2540 B.	N/A

Sample ID: Evaporator (Wk Lq) Lab ID: 9410015-03 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	NONE	BTU/lb as recd	10/17/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	NONE	BTU/lb dry wt.	10/17/94	CJK	ASTM D240-85	N/A
Chloride	9,890	mg/kg dry wt.	10/07/94	WS	EPA 9252	5,000
Density	8.8	lbs/gallon	10/27/94	MBR	APHA 2710 F.	N/A
Fixed Solids (Ash)	56.5	% of tot solid	10/05/94	WS	APHA 2540B/E	N/A
Total Solids	8.72	% of sample	10/06/94	WS	APHA 2540 B.	N/A

MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

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Phone: 616-399-6070 FAX 616-399-6185

MEN01416

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: October 31, 1994

ANALYSIS OF: Waste Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on October 3, 1994.

Sample ID: Lagoon (Wk Lq) Lab ID: 9410015-01 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Chloride	45,100	mg/kg dry wt.	10/07/94	WS	EPA 9252	5,000
Density	8.5	lbs/gallon	10/27/94	MBR	APHA 2710 F.	N/A
Total Solids	1.96	% of sample	10/24/94	WS	APHA 2540 B.	N/A

Sample ID: Recycle Liquor Lab ID: 9410015-02 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,390	BTU/lb as recd	10/17/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	4,025	BTU/lb dry wt.	10/17/94	CJK	ASTM D240-85	N/A
Chloride	6,190	mg/kg dry wt.	10/07/94	WS	EPA 9252	170
Fixed Solids (Ash)	43.5	% of tot solid	10/05/94	WS	APHA 2540B/E	N/A
Total Solids	59.4	% of sample	10/06/94	WS	APHA 2540 B.	N/A

Sample ID: Evaporator (Wk Lq) Lab ID: 9410015-03 Collected: 09/26/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	NONE	BTU/lb as recd	10/17/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	NONE	BTU/lb dry wt.	10/17/94	CJK	ASTM D240-85	N/A
Chloride	9,890	mg/kg dry wt.	10/07/94	WS	EPA 9252	5,000
Density	8.8	lbs/gallon	10/27/94	MBR	APHA 2710 F.	N/A
Fixed Solids (Ash)	56.5	% of tot solid	10/05/94	WS	APHA 2540B/E	N/A
Total Solids	8.72	% of sample	10/06/94	WS	APHA 2540 B.	N/A

MDL = Method Detection Limit

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MEN01417

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: December 2, 1994

ANALYSIS OF: Miscellaneous Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on November 15, 1994.

Sample ID: Recycle 54% -- 110594 Lab ID: 9411149-01

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	4,220	BTU/lb as recd	11/25/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	8,540	BTU/lb dry wt.	11/25/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	58.3	% of tot solid	11/17/94	WS	APHA 2540B/E	N/A
Total Dissolved Solids	N/A	mg/L	11/28/94	GCB	APHA 2540 C.	N/A
Total Solids	49.4	% of sample	11/17/94	WS	APHA 2540 B.	N/A

Sample ID: Recycle 57.5% -- 110894 Lab ID: 9411149-02

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,420	BTU/lb as recd	11/25/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	4,020	BTU/lb dry wt.	11/25/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	42.0	% of tot solid	11/17/94	WS	APHA 2540B/E	N/A
Total Dissolved Solids	N/A	mg/L	11/28/94	GCB	APHA 2540 C.	N/A
Total Solids	60.2	% of sample	11/17/94	WS	APHA 2540 B.	N/A

Sample ID: SLI Product -- 110594 Lab ID: 9411149-03

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Carbonate as CaCO3	33.4	% Ca(OH)2	11/29/94	JA	APHA4500-CO2	N/A
Chloride	2,890	mg/kg dry wt.	11/16/94	WS	EPA 300.0	10
Sulfate	37,700	mg/kg dry wt.	11/16/94	WS	EPA 300.0	50
Total Solids	100	% of sample	11/17/94	WS	APHA 2540 B.	N/A
Acid Digestion, Solid	11/16/94	date digested		CJK	EPA 3050	
Calcium	6,820	mg/kg dry wt.	11/29/94	WS	EPA 7140	2
Magnesium	1,170	mg/kg dry wt.	11/28/94	WS	EPA 6010	2
Manganese	220	mg/kg dry wt.	11/28/94	WS	EPA 6010	0.05
Potassium	34,300	mg/kg dry wt.	11/29/94	WS	EPA 7610	8
Silicon	BDL	mg/kg dry wt.	11/28/94	WS	EPA 6010	5
Sodium	303,000	mg/kg dry wt.	11/29/94	WS	EPA 7770	4
Melting Point	1460-1500	°F	12/01/94	GLI		

N/A = Not Applicable
BDL = Below Detection Limit
MDL = Method Detection Limit

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MEN01418

Sample ID: SLI Product -- 110894 Lab ID: 9411149-04

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Carbonate as CaCO3	33.9	% Ca(OH)2	11/29/94	JA	APHA4500-CO2	N/A
Chloride	2,410	mg/kg dry wt.	11/16/94	WS	EPA 300.0	10
Sulfate	33,800	mg/kg dry wt.	11/16/94	WS	EPA 300.0	50
Total Solids	100	% of sample	11/17/94	WS	APHA 2540 B.	N/A
Acid Digestion, Solid	11/16/94	date digested		CJK	EPA 3050	
Calcium	5,940	mg/kg dry wt.	11/29/94	WS	EPA 7140	2
Magnesium	880	mg/kg dry wt.	11/28/94	WS	EPA 6010	2
Manganese	140	mg/kg dry wt.	11/28/94	WS	EPA 6010	0.05
Potassium	27,300	mg/kg dry wt.	11/29/94	WS	EPA 7610	8
Silicon	120	mg/kg dry wt.	11/28/94	WS	EPA 6010	5
Sodium	207,000	mg/kg dry wt.	11/29/94	WS	EPA 7770	4
Melting Point	1460-1520	°F	12/01/94	GLI		

N/A = Not Applicable
BDL = Below Detection Limit
MDL = Method Detection Limit

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MEN01419

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: November 17, 1994

ANALYSIS OF: Waste Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on November 4, 1994.

Sample ID: Recycle Liquor 103194 Lab ID: 9411054-01 Collected: 10/31/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,450	BTU/lb as recd	11/16/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	3,650	BTU/lb dry wt.	11/16/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	38.8	% of sample	11/08/94	WS	APHA 2540B/E	N/A
Total Dissolved Solids	N/A	% of sample	11/09/94	TBB	APHA 2540 C.	N/A
Total Solids	67.0	% of sample	11/08/94	WS	APHA 2540 B.	N/A

Note: The sample was not filterable for Total Dissolved Solids analysis.

N/A = Not Applicable
MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01420

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: January 9, 1995

ANALYSIS OF: Miscellaneous Samples

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on November 29, 1994.

Sample ID: SLI Product Lab ID: 9411251-01 Collected: 11/16/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Carbonate as CaCO3	30.1	% Ca(OH)2	12/27/94	JA	APHA4500-CO2	N/A
Chloride	3,490	mg/kg dry wt.	12/06/94	WS	EPA 300.0	12
Sulfate	40,100	mg/kg dry wt.	12/06/94	WS	EPA 300.0	60
Total Solids	83.7	% of sample	11/30/94	WS	APHA 2540 B.	N/A
Acid Digestion, Solid	11/29/94	date digested		CJK	EPA 3050	
Calcium	7,100	mg/kg dry wt.	12/29/94	MBR	EPA 7140	1.0
Magnesium	1,200	mg/kg dry wt.	12/06/94	MBR	EPA 6010	2.5
Manganese	250	mg/kg dry wt.	12/16/94	CJK	EPA 7460	0.60
Potassium	46,000	mg/kg dry wt.	12/13/94	MBR	EPA 7610	1
Silicon	4.0	mg/kg dry wt.	01/07/95	MBR	EPA 6010	0.5
Sodium	334,000	mg/kg dry wt.	12/21/94	MBR	EPA 7770	2.5
Melting Point	782-815 1465 – 1525	°C	12/20/94	GLI		

Sample ID: Recycle 111694 - 58% Lab ID: 9411251-02 Collected: 11/16/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,560	BTU/lb as recd	12/12/94	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	4,010	BTU/lb dry wt.	12/12/94	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	42.0	% of tot solid	12/01/94	WS	APHA 2540B/E	N/A
Total Solids	63.9	% of sample	12/01/94	WS	APHA 2540 B.	N/A

MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01421

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: January 25, 1995

ANALYSIS OF: Waste Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on January 10, 1995.

Sample ID: Recycle 121694 - 55% Lab ID: 9501068-01 Collected: 12/16/94

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,500	BTU/lb as recd	01/23/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	4,460	BTU/lb dry wt.	01/23/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	44.4	% of tot solid	01/13/95	GCB	APHA 2540B/E	N/A
Sulfate	0.046	% as recd	01/24/95	CJK	EPA 300.0	0.023
Total Solids	56.1	% of sample	01/13/95	GCB	APHA 2540 B.	N/A

MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01422

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: January 27, 1995

ANALYSIS OF: Solid Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on January 17, 1995.

Sample ID: Recycle 11695 - 55% Lab ID: 9501143-01 Collected: 01/16/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	1,870	BTU/lb as recd	01/26/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	3,100	BTU/lb dry wt.	01/26/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	41.8	% of tot solid	01/19/95	GCB	APHA 2540B/E	N/A
Sulfate	0.36	% as recd.	01/27/95	CJK	EPA 300.0	0.036
Total Solids	60.7	% of sample	01/19/95	GCB	APHA 2540 B.	N/A

MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

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Phone: 616-399-6070 FAX 616-399-6185

MEN01423

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: February 24, 1995

ANALYSIS OF: Waste Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on February 14, 1995.

Sample ID: Recycle Liquor 21395 - 55% Lab ID: 9502107-01 Collected: 02/13/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,300	BTU/lb as recd	02/24/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	3,870	BTU/lb dry wt.	02/24/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	40.4	% of tot solid	02/16/95	GCB	APHA 2540B/E	NA
Total Solids	59.3	% of sample	02/16/95	GCB	APHA 2540 B.	NA

MDL = Method Detection Limit

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ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01424

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: April 11, 1995

ANALYSIS OF: Solid Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on March 28, 1995.

Sample ID: 031795 Recycle 56% Lab ID: 9503206-01 Collected: 03/17/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	1,990	BTU/lb as recd	04/11/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	3,450	BTU/lb dry wt.	04/11/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	51.9	% of dry solid	03/30/95	GCB	APHA 2540B/E	N/A
Total Solids	57.6	% of sample	03/30/95	GCB	APHA 2540 B.	N/A

MDL = Method Detection Limit

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WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX 616-399-6185

MEN01425

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys

DATE: May 22, 1995

ANALYSIS OF: Waste Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on May 9, 1995.

Sample ID: Recycle 050995 -- 57% Lab ID: 9505099-01 Collected: 05/09/95

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,700	BTU/lb as recd	05/22/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	5,520	BTU/lb dry wt.	05/22/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	52.8	% of tot solid	05/15/95	GCB	APHA 2540B/E	NA
Total Solids	48.9	% of sample	05/15/95	GCB	APHA 2540 B.	NA

MDL = Method Detection Limit

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WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.

3352 128th Avenue, Holland, Michigan 49424-9263
Phone: 616-399-6070 FAX. 616-399-6185

MEN01426

CLIENT: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys
Re: Recycle 06795 - 56%

DATE: June 26, 1995

ANALYSIS OF: Solid Sample

REPORTED BY: Robert K. Zahray, Laboratory Manager

DATE RECEIVED: Received from client on June 13, 1995.

Sample ID: Recycle 06795 - 56% Lab ID: 9506119-01

TEST	RESULT	UNITS	ANALYZED	BY	METHOD	MDL
Calorific Value	2,240	BTU/lb as recd	06/26/95	CJK	ASTM D240-85	N/A
Calorific Value (Dry)	3,640	BTU/lb dry wt.	06/26/95	CJK	ASTM D240-85	N/A
Fixed Solids (Ash)	47.1	% of sample	06/15/95	WS	APHA 2540B/E	N/A
Total Solids	61.5	% of sample	06/15/95	WS	APHA 2540 B.	N/A

MDL = Method Detection Limit

Printed on Recycled Paper

VARIABLES CONTROL CHART (X & R)

PART NO. | CHART NO.

MEN01427

PART NAME (PRODUCT): Recycle Liquor

OPERATION (PROCESS): Outside Analysis

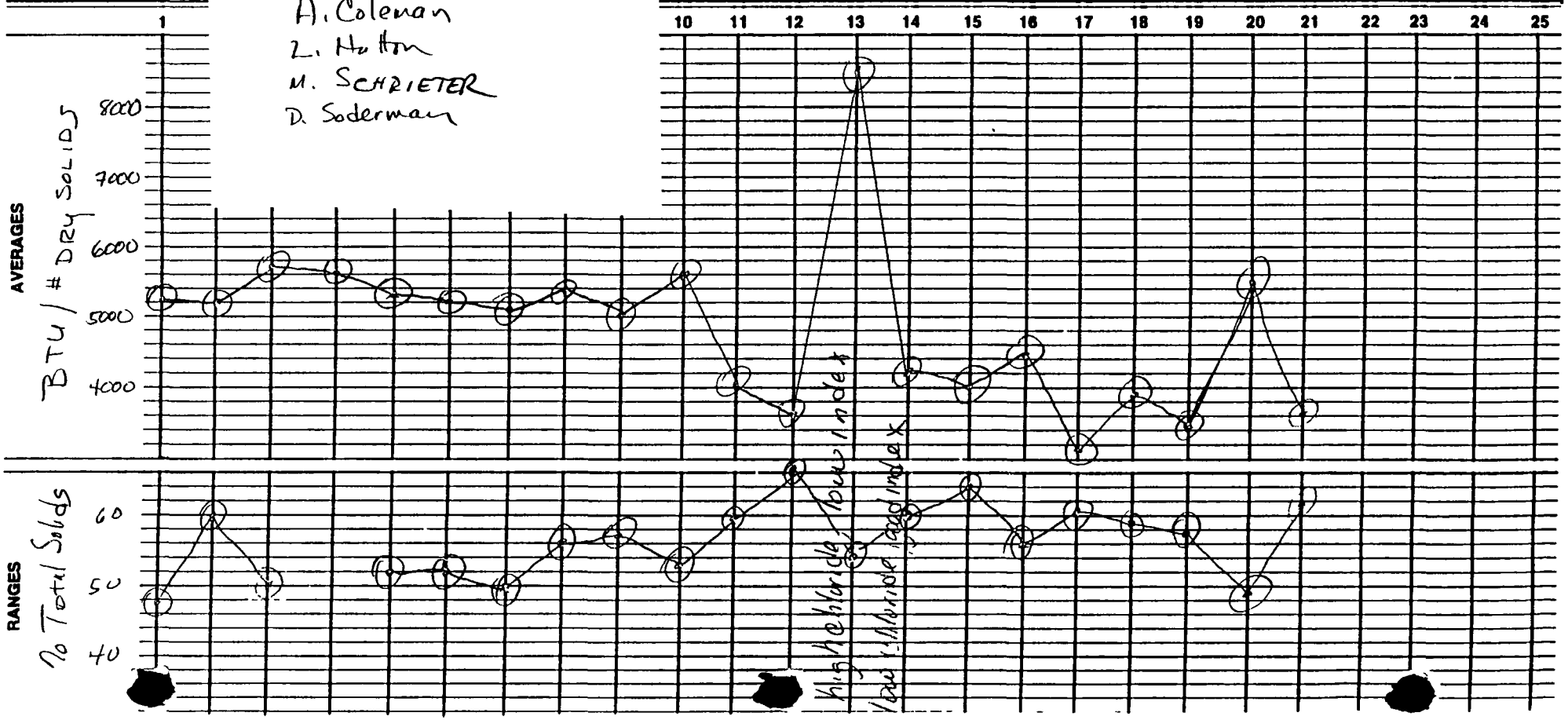
ATOR

LIMITS: AVG- UCL- LCL-

UNIT OF MEASURE: BTU/#Dry Solids

993	3/23	6/7	6/10	9/17	10/1	10/27	11/30	1/13 94	3/29	6/29	9/26	10/31	11/5	11/8	11/16	12/16	1995 1/16	2/13	3/17	5/9	6/7
SAMPL MEASUREM 1	5250	5200	5693	5600	5300	5200	5100	5400	5000	5590	4025	3650	8540	4200	4010	4460	3100	3870	3450	5520	3640
2																					
3																					
4																					
5																					
% total Solids	47.7	60	50.3	—	52	52	50	56	57	53	59.4	67	54	60.2	63.9	56.1	60.7	59.3	57.6	52.8	61.5
AVERAGE, $\bar{X}$																					
RANGE, R																					
NOTES																					

cc/ D. Merkel
A. Coleman
L. Hutton
M. Schrieter
D. Soderman



VARIABLES CONTROL CHART (X & R)

PART NO.

CHART NO.

PART NAME (PRODUCT): Recycle liquor % Ash

OPERATION (PROCESS): Outside Analysis

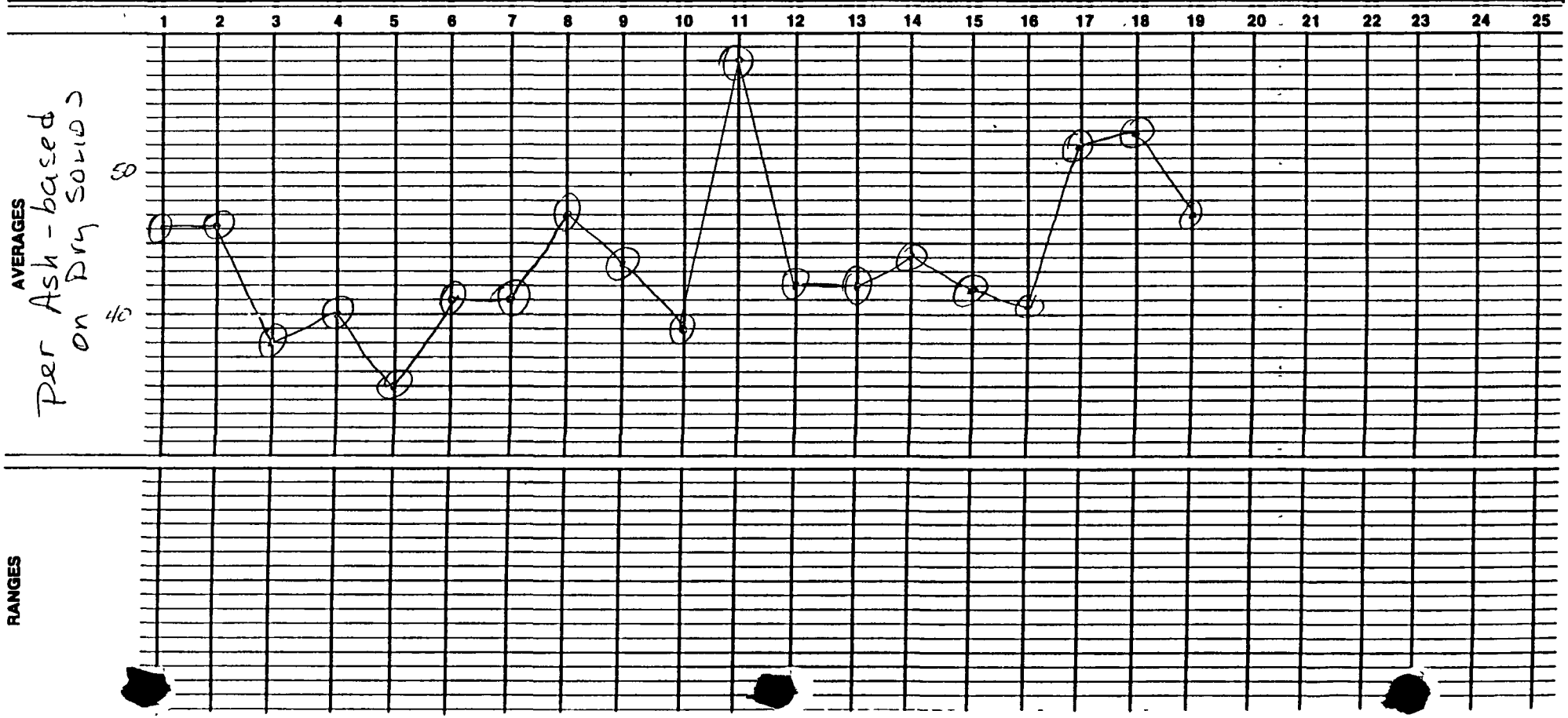
OPERATOR

LIMITS AVG- UCL- LCL-

UNIT OF MEASURE: %

MEN01428

	1993 3/23	6/10	10/1	10/27	11/30	1/13 94	3/29	6/29	9/26	10/31	11/5	11/8	11/16	12/16	1995 1/16	2/13	3/17	5/9	6/7
MEASUREMENTS 1	46.3	46.3	38	40	35	41	41	47	43.5	38.8	58.3	42	42	44.4	41.8	40.4	51.9	52.8	47.1
2																			
3																			
4																			
5																			
SUM																			
AVERAGE, $\bar{X}$																			
RANGE, R																			
NOTES																			



MISCELLANEOUS TEST RESULTS

DOCUMENT #39

MENASHA CORPORATION

14 April 1982

Department of Natural Resources
Region III, Secondary Complex
P.O. Box 30028
Lansing, MI 48909
Attn: Virginia Loselle

Dear Virginia;

Please find enclosed the results of the leachate analysis on fly ash, ash-lime sludge, hydrapulper rejects, and hydrapulper tail.

The samples were collected over a months time. The fly ash samples 2382, 3082, and 2182, were days when only coal from one supplier was used.

The ASTM Procedure D-3987 was used for all the leachate analysis.

If you have any questions, please feel free to call John Blauwkamp or myself.

Sincerely,

Menasha Corporation
Otsego Paperboard Division

Gary E. Roys
Process Chemist &
Group Leader

Enclosure

GR/kj

cc: John Blauwkamp
Elizabeth Bols

Parameter	Composite Fly Ash	2382 Fly Ash	3082 Fly Ash	2182 Fly Ash	Ash Lime Sludge	Hydrapulper Rejects	Hydrapulper Tail
pH	8.6	8.4	8.9	9.6	9.9	6.7	7.8
Suspended Solids mg/l 1*	N.D	N.D.	N.D.	N.D.	N.D.	N.D.	28
Total Hardness mg/l	150	130	130	120	17	--	--
Sulfate mg/l	270	340	460	360	40	10	< 5
Chloride mg/l	31	59	125	135	13	--	--
COD mg/l	2	6	7	8	14	1000	660
Total Phosphorus mg/l	0.26	0.56	0.33	0.25	0.13	--	--
Nitrate-N mg/l	0.20	0.68	0.23	0.26	1.1	0.06	0.03
Lead mg/l	0.026	< .010	< .010	< .010	< .010	0.11	0.019
Arsenic mg/l	0.054	0.040	0.069	.063	.033	--	--
Cadmium 2* mg/l	N.D	N.D.	N.D.	N.D.	N.D.	--	--
Total 3* Chromium mg/l	N.D.	N.D.	N.D.	N.D.	< .005	.012	N.D.
Mercury 4* mg/l	N.D.	< 0.0002	0.0004	N.D.	.0003	--	--
Selenium mg/l	0.025	0.15	0.11	0.11	0.007	--	--
Iron mg/l	< .010	< .010	0.010	0.013	< .010	.52	21
Calcium mg/l	45	32	33	44	3.4	27	4.7
Sodium mg/l	64	100	230	190	49	260	150
Copper mg/l	0.005	< 0.005	0.006	0.006	.005	0.053	0.077

MEN01431

MEN01432

Parameter	Composite Fly Ash	2382 Fly Ash	3082 Fly Ash	2182 Fly Ash	Ash Lime Sludge	Hydrapulper Rejects	Hydrapulper Tail
PCB mg/l 5*	N.D.	N.D.	N.D.	N.D.	N.D.	--	--
TOC mg/l	<1	1	1	1	5	340	280
Magnesium mg/l	4.2	5	6.6	8.2	1.2	3.4	1.5
Total Organic Nitrogen mg/l						3.4	1.4
Nitrite-N mg/l						0.07	0.02
Zinc mg/l						0.52	0.19
Potassium mg/l						8.3	5.4

N.D. - None Detected

1* Detection limit <2 mg/l
2* Detection limit <.003 mg/l
3* Detection limit <.005 mg/l
4* Detection limit <.0002 mg/l
5* Detection limit <0.2 mg/l

CLOW
HYDRO RESEARCH SERVICES
Water Management Division
Clow Corporation
313/334-4747

5-23-83

Menasha Corporation
330 North Farmer St.,
Otsego, MI 49078
Attn: Mr. Gary Frys

Sample received: 5-10-83

Hydro Order: 64033

Client I.S. ASTM-D3987 Leachate procedure on #5683 Lime Ash

Leachate:

Lead, Pb, mg/l	<0.05
Arsenic, As, mg/l	0.18 →
Cadmium, Cd, mg/l	<0.01
Total Chromium, Cr, mg/l	<0.02
Selenium, Se, mg/l	<0.005
Iron, Fe, mg/l	<0.02
Zinc, Zn, mg/l	<0.02
Copper, Cu, mg/l	<0.02
Total Dissolved Solids, TDS, mg/l	256
Nitrogen Nitrate, N, mg/l	0.96
Sulfate, SO_4, mg/l	25
Chloride, Cl, mg/l	18

As received:

pH	7.7
Total Solids, TS %,	79.0
Calcium Carbonate, %	9.5

700 grams of solids were leached with 2800 mls of deionized water for 24 hours. The final pH was 7.7.

Linda Deans
Linda Deans
General Laboratory Manager

MEN01434

CLOW
HYDRO RESEARCH SERVICES
Water Management Division
Clow Corporation
408 Auburn Avenue
Pontiac, MI 48058
313 3
313 334-4747

July 28, 1983

Menasha Corporation
320 North Farmer Street
Otsego, MI 49078
Attn: Mr. Gary Roys

Sample received: 7-20-83

Hydro Number: 66524

Client I.D. 71983 Lime Ash
ASTM-D 3987 Leachate Procedure

Arsenic, As, mg/l 0.19

700 grams of solids were leached with 2800 mls of deionized water for 48 hours.

Linda Deans
Linda Deans
General Laboratory Manager

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.
245 EAST LAKEWOOD BLVD.
HOLLAND, MI 49423-2066
PHONE 616-396-1209

MEN01435

TO: Menasha Corporation
P.O. Box 155
Otsego, Michigan 49078

Attn: Gary Roys

DATE: December 6, 1984

ANALYSIS: of water.

CONDENSATE SAMPLE FROM SL1 EVAPORATOR

CERTIFIED BY: William G. Rauch
William G. Rauch

SAMPLING DATE: Received from client on November 27, 1984.

RESULTS: Expressed as milligrams per liter (mg/ℓ).

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
841146	(None Given)	methylene chloride	<0.001
		chloroform	<0.001
		trichloroethylene	<0.001
		benzene	<0.001
		toluene	<0.001
		ethyl benzene	<0.001
		xylene	<0.001
		naphthalene	<0.01
		COD	1,030

RK

MEN01436

MENASHA CORPORATION
PAPERBOARD GROUP

January 9, 1985

Garth Aslakson
Department of Natural
Resources
621 10th
Plainwell, MI 49080

Dear Garth:

Menasha Corporation is by this letter requesting that appropriate changes be made in our NPDES permit application to allow discharge of our evaporator condensate through outfall 003 rather than having the evaporator condensate go through the aeration pond. This would allow reducing the flow rate through our clarifier by about 200,000 gallons per day when the evaporator is running and would level out the flowrate through the waste treatment system. The results of this would be improved operation of the clarifier and the waste treatment system as a whole.

The testing requested by Asad Quraishi's September 25 letter has been completed and the results are attached. Of the parameters that were requested to be tested for only COD and BOD were detectable. Discharge of the evaporator condensate through outfall 003 would increase our total BOD discharge by an average of about 400 lb/day with a maximum increase of about 800 lbs/day. Since our normal BOD discharge is relatively low, no increase in our total BOD discharge limit would be required.

The flow sheet attached to the September 25 letter indicated that the evaporator condensate would be put into the system between the clarifier and the polishing ponds. This is incorrect. Our intention is to inject the evaporator condensate into the effluent pipe either between the weir 000 and the mix box or into the mix box itself. Since no treatment of the evaporator condensate will occur, we will simply inject it into the effluent pipe at the most convenient point.

The monitoring and the control of the evaporator condensate will consist of the following:

1. A magnetic flow meter with a totalizer will be used to determine the total gallons per day of condensate discharged.
2. A sample valve activated by a timer will be used to obtain the composite samples necessary for the required testing.

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO, MICHIGAN 49078 • PHONE 616-692-6141

Garth Aslakson
1/9/85

3. An inline induction type conductivity sensor will be installed in the pipe to continuously monitor the evaporator condensate. In the event that a high conductivity is sensed, indicating excessive carryover in the evaporator or a leak in the preheater, an alarm would sound in the operators station and the system would automatically divert the evaporator condensate to the U-drain system in the SLI building. The U-drain pumps would then pump the condensate back to the weak liquor tank until such time as the problem was corrected and the operators reset the system to normal.

Since we would be injecting the evaporator condensate into the effluent pipe after outfall 000 our NPDES permit would have to reflect this change and allow us to add the total volume and BOD discharged from the evaporator condensate to the total of outfall 000 and 002. If you have any questions concerning this matter, please contact the writer.

Sincerely

Menasha Corporation
Otsego Paperboard Division

John R. Blauwkamp P.E.

John R. Blauwkamp, P.E.
Corporate Environmental Manager

cc: K. Kling
B. Shepard

kj

MENASHA CORPORATION

February 17, 1986

Department of natural Resources
P.O. Box 30166
Lansing, MI 48909

Gentlemen:

We have completed the Short Term Waste Characterization Study as required in our NPDES permit #M10003824.

As stated in our plan, samples were collected during the month of October 1985 and testing was run by a local laboratory using EPA methods 601 and 602.

A copy of the cover letter and test results received from the laboratory are attached. The results indicate a persistant presence of acetone, bromoform and 1,2 dichlorethane in outfall 002. We have no solid explanations for their presence. We have contacted our chemical suppliers, all reported no traces of these chemical in the products they supply us.

On February 5, we sent in samples of our well water before and after treatment chemicals were added and another sample of outfall 002. None of the contaminates found in October were detected in either well water sample. The outfall sample had chemical concentrations similar to the October test results. The lab is running the tests in a second GC column to verify the identity of these chemicals, the results will not be available until after February 28.

Acetone is a product of thermal degredation of wood. Since wood chips in the mill process do reach the temperature where thermal degradation begins, this could be the source of the acetone. I have no plausable explanation for the presence of bromoform or 1,2 dichlorethane. Neither bromoform or 1,2 dichlorethane were found in any of our outfalls in the 1981 priority pollutants scan.

At this point we do not have conclusive proof of the identity of these chemcials, we should have this sometime in March. We also do not know if the quantities of these chemicals being discharged would be considered a hazard to the river. I feel we need answers to these questions before we spend a good deal more time and money to track down their sources.

If you have any quetions or comments, please call me.

Sincerely,

Menasha Corporation
Otsego Paperboard Division

Mark T. Reed

Mark Reed
Technical Manager

cc: R. L. Janda
B. Buchanan
K. Kling
J. Blauwkamp
T. Oldham
F. Katje
G. Roys
L. Koivuniemi

kj

MEN01440

PREIN & NEWHOF, P.C.
ENGINEERS — SURVEYORS
ENVIRONMENTAL & SOILS LABORATORIES
3000 EAST BELT LINE N.E., GRAND RAPIDS, MICHIGAN 49505
285 JAMES STREET, SUITE E, HOLLAND, MICHIGAN 49423

TELEPHONE (616) 364-8491
TELEPHONE (616) 399-9218

H. EDWARD PREIN P.E., R.L.S.
THOMAS NEWHOF P.E.
WILSON D. McQUEEN P.E.
LARRY D. WILSON P.E.
MICHAEL S. FULLER P.E.
PHILIP C. GLUPKER P.E.
JAMES A. COOK P.E.
ROBERT J. VANDER MALE P.E.
ROBERT J. REIMINK P.E.
ARTHUR W. BRINTNALL R.L.S.
REX A. MILLIRON R.L.S.

January 6, 1985
77129

Mr. John Blauwkamp
Menasha Corporation
P O Box 155
Otsego, Michigan 49078

RE: Samples received October 7, 14, 21 and 28, 1985 for Volatile Hydrocarbon Scans

Dear Mr. Blauwkamp:

The above referenced samples were analyzed by Gas Chromatograph using a column that separates volatile halocarbons (EPA Scan 601) and volatile aromatic hydrocarbons (EPA Scan 602).

A trace of toluene was found in only one sample, #003 for 10/14/85. Two large peaks and one smaller peak were found in all the samples from site #002. These had retention times that were the same as acetone, 1,2-Dichloroethane and bromoform. However, even though they had the same retention times as a given standard on one type of column, this is not proof of their identity. To prove the presence or absence of these compounds the samples would have to be tested on a second column with a different elution pattern. The preferred method of identification is by GC/MS.

The results of the scans performed are tabulated on the next page. When anything unusual was found, such as the large peaks in the #002 samples, duplicate tests were performed on the second vial of the sample to check that there was no interference in the first vial. In all cases duplicate tests gave similar results.

The concentrations listed under the tentatively identified compounds are based on the standard curves of those compounds. If they are found to be another substance, the quantifications may vary according to sensitivity.

If you have any questions please do not hesitate to call me.

Very truly yours,

PREIN & NEWHOF

Jane Hoch

Jane Hoch
Chemist

JH:sa

MEN01441

PREIN & NEWHOF LABORATORY SUMMARY
MENASHA CORPORATION
OTSEGO, MICHIGAN
OCTOBER, 1985

Sample Location	Date	P & N Log Number	Toulene ug/L	TENTATIVE IDENTIFICATIONS ** Acetone ug/L	1,2 Dichloro-ethane, ug/L	Bromoform ug/L	Other compounds in scans 601, 602
002	10/7/85	1283*	<1	175	27	39	<1
	10/14/85	1333*	<1	171	36	33	<1
	10/21/85	1380*	<1	142	23	11	<1
	10/28/85	1472*	<1	166	30	8	<1
003	10/7/85	1281	<1	<1	<1	<1	<1
	10/14/85	1334*	2	13	1	<1	<1
	10/21/85	1381	<1	<1	<1	<1	<1
	10/28/85	1473	<1	<1	<1	<1	<1
River	10/7/85	1282	<1	<1	<1	<1	<1
	10/14/85	1335*	<1	1	4	<1	<1
	10/21/85	1379*	<1	<1	<1	<1	<1
	10/28/85	1471	<1	<1	<1	<1	<1

* Tested in duplicate, using different sample vials.
** Concentrations of tentatively identified compounds are based on standard curves of those compounds.

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC
245 EAST LAKEWOOD BLVD
HOLLAND, MI 49423-206
PHONE 616-396-120

MEN01442

TO: Menasha Corporation
PO Box 155
Otsego, Michigan 49078

Attn: John Blauwkamp

DATE: June 9, 1986

ANALYSIS: OF WATER SAMPLES

REPORTED BY: Robert W. Hamm
Robert W. Hamm, Laboratory Director

SAMPLING DATE: Received from client on May 28, 1986.

RESULTS: Expressed as noted.

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
865127-1	002 Weir 05/19/86 3:30 p.m.	See Attached Table	
-2	002 05/26/86 11:00 a.m.	See Attached Table	

WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

TABLE 1
VOLATILE ORGANIC PRIORITY POLLUTANTS
Results for Menasha Corporation
Received May 28, 1986. Reported June 9, 1986.
Expressed as micrograms per liter (µg/ℓ).
Limit of detection is 2.5 µg/ℓ except where noted in parentheses.

Parameter	002 Weir 05/19/86 3:30 p.m.	002 05/26/86 11:00 a.m.
chloromethane(25)	N.D.	N.D.
bromomethane(25)	N.D.	N.D.
vinyl chloride(25)	N.D.	N.D.
chloroethane(25)	N.D.	N.D.
chloroform	N.D.	N.D.
bromoform	N.D.	N.D.
dibromochloromethane	N.D.	N.D.
bromodichloromethane	N.D.	N.D.
methylene chloride	N.D.	N.D.
1,1-dichloroethylene	N.D.	N.D.
1,1-dichloroethane	N.D.	N.D.
carbon tetrachloride	N.D.	N.D.
1,2-dichloropropane	N.D.	N.D.
trichloroethylene	N.D.	N.D.
1,1,2-trichloroethane	N.D.	N.D.
tetrachloroethylene	N.D.	N.D.
trans-1,2-dichloroethylene	N.D.	N.D.
1,2-dichloroethane	N.D.	N.D.
1,1,1-trichloroethane	N.D.	N.D.
cis-1,3-dichloropropene	N.D.	N.D.
trans-1,3-dichloropropene	N.D.	N.D.
1,1,2,2-tetrachloroethane	N.D.	N.D.
2-chloroethyl vinyl ether(12.5)	N.D.	N.D.
chlorobenzene	N.D.	N.D.
benzene	N.D.	N.D.
toluene	N.D.	N.D.
ethyl benzene	N.D.	N.D.
acrolein (12.5)	N.D.	N.D.
acrylonitrile (12.5)	N.D.	N.D.
ESI #865127	-1	-2

MEN01444

PREIN & NEWHOF, P.C.

ENGINEERS — SURVEYORS — ENVIRONMENTAL & SOILS LABORATORIES

3355 EVERGREEN DR N E
GRAND RAPIDS MICHIGAN 49505
TELEPHONE (616) 364-8491
TELECOPIER (616) 364-6955

BRANCH OFFICE
400 136th AVE , SUITE 517
HOLLAND, MICHIGAN 49424
TELEPHONE (616) 394-0200
TELECOPIER (616) 394-5914

H EDWARD PREIN PE RLS
THOMAS NEWHOF PE
WILSON D McQUEEN PE
MICHAEL S BERGSTROM PE
MICHAEL S FULLER PE
PHILIP C GLUPKER PE
JAMES A COOK PE
ROBERT J VANDER MALE PE
ROBERT J REIMINK PE
ARTHUR W BRINTNALL RLS
REX A MILLIRON RLS
SIDNEY P WAGNER JR PE
BASIL J ANDRESS JR RLS
RICHARD J REIMBOLD PE
LARRY D STEHOUWER PE

December 29,1990
77129L

Mr. John Bonnam
Menasha Corporation
P.O. Box 155
Otsego, MI 49078

Re: Sample received 12/14/90

LABORATORY RESULTS

Sample #	Whitewater (Wire Pit 121390)
Lab Log #	6122
Total Naptha.mg/L	18.2

GC Method used: 70 oC Isothermal
Dbwax column
direct inject.

PREIN & NEWHOF
Environmental Laboratory

Robert Erickson
Chemist

MEN01445

PREIN & NEWHOF, P.C.

ENGINEERS — SURVEYORS — ENVIRONMENTAL & SOILS LABORATORIES

3355 EVERGREEN DR., N.E.
GRAND RAPIDS MICHIGAN 49505
TELEPHONE (616) 364-8491
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WILSON D McQUEEN PE
MICHAEL S BERGSTROM PE
MICHAEL S FULLER PE
PHILIP C GLUPKER PE
JAMES A COOK PE
ROBERT J VANDER MALE PE
ROBERT J REIMINK PE
ARTHUR W BRINTNALL RLS
REX A MILLIRON RLS
SIDNEY P WAGNER JR PE
BASIL J ANDRESS JR RLS
RICHARD J REIMBOLD PE
LARRY D STEHOUWER PE

February 8, 1991
771291.

Mr. John Bonham
Menasha Corporation
P.O. Box 155
Otsego, Mi 49078

Re: Sample received 1/29/91

LABORATORY RESULTS

Sample #	# 1 Wire Pit 12891
Lab Log #	458
Total Naptha, mg/L	2.39

GC Method used: 70 oC Isothermal
Dbwax column
direct inject.

PREIN & NEWHOF
Environmental Laboratory

Robert Erickson
Chemist

K hling

WESTERN MICHIGA
ENVIRONMENTAL SERVICES, INC
245 EAST LAKEWOOD BLVD
HOLLAND, MI 49424-206
PHONE 616-396-120

MEN01446

TO: Menasha Corporation
320 North Farmer
Otsego, Michigan 49078

Attn: Gary Roys
Re: Mill White Water

DATE: February 26, 1991. Revised March 6, 1991.

ANALYSIS: OF WASTEWATER SAMPLE

REPORTED BY: Robert K Zahray
Robert K. Zahray, Laboratory Manager

SAMPLING DATE: Received from client January 29, 1991

RESULTS: Expressed as parts per million (ppm).

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
9101223-1	#1PM Wire Pit 01/28/91	Naphthol Spirit	<0.2
		EPA HSL Volatiles	See Attached Table
-3	Trip Blank 11/14/90	EPA HSL Volatiles	See Attached Table

WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC.

TABLE 1
Results for Menasha Corporation
Received January 29, 1991. Reported February 26, 1991.
Expressed as micrograms per liter (μg/ℓ).
Limit of detection limit is 1 except where noted in parentheses.

Parameter	#1PM Wire Pit 01/28/91	Trip Blank 11/14/90
Acetone (50)	*	*
Acrolein (50)	*	*
Acrylonitrile (50)	*	*
Benzene	*	*
Bromodichloromethane	*	*
Bromoform	*	*
Bromomethane (10)	*	*
2-butanone (50)	1500	*
Carbon disulfide	*	*
Carbon Tetrachloride	*	*
Chlorobenzene	*	*
Chlorodibromomethane	*	*
Chloroethane (10)	*	*
2-chloroethyl vinyl ether (50)	*	*
Chloroform	*	*
Chloromethane (10)	*	*
Dichlorodifluoromethane (10)	*	*
1,1-dichloroethane	*	*
1,2-dichloroethane	*	*
cis-1,2-dichloroethene	*	*
trans-1,2-dichloroethene	*	*
1,2-dichloropropane	*	*
cis-1,3-dichloropropene	*	*
Ethylbenzene	*	*
2-hexanone (50)	*	*
Methylene chloride	*	*
4-methyl-2-pentanone (50)	*	*
Styrene	*	*
1,1,2,2-Tetrachloroethane	*	*
Tetrachloroethene	1.1	*
Toluene	*	*
1,1,1-trichloroethane	8.0	*
1,1-2-trichloroethane	*	*
Trichloroethene	*	*
Trichlorofluoromethane	*	*
Vinyl acetate (10)	*	*
Vinyl chloride (2.4)	*	*
Total Xylenes	*	*

CLOSURE OF SURGE POND

DOCUMENT #40

ORM 561

MEN01449

memo / MENASHA CORPORATION

TO: John Bonham

DATE: July 24, 1986

SUBJECT: Surge Pond-Closure

FROM: Mark Reed

The surge pond needs to be closed out with in the next year or so. Reasons for closing the pond include:

1. its an unsightly mess
2. environmental concerns
3. in the past few years it has been slowly collapsing, it now holds about 1/2 of what it did 10 years ago.
4. it uses up prime real estate for parking

There are a number of things that need to be thought through carefully and projects completed <u>before</u> the pond is closed. First, the majority of the flow to the surge pond comes from the beater room sump The beater room sump is a catch all for water from the beater room through secondary fiber, the water contains a lot of fiber and contaminates Getting the fiber and contaminates addressed is obviously the first task to be addressed. Easiest to address is the papermachine selectifier screen rejects which go to the sewer whenever secondary fiber is ? down. DSM screens (which are in house) can be used to separate the fiber from the water. The fiber then needs to be diverted into the kraft final, broke or little wood chest. The next task is to get the Krofta rejects at secondary fiber thickened up so they can be landfilled. This will probably involve a hydradenser or some type of screening equipment Once the Krofta rejects are diverted from the U-drains, the sump pumps at secondary fiber can be valved to pump back to the pulper, allowing us to recover any fiber spills in that area Once the contaminants are taken care of, the beater room sump water can be diverted back into the mill white water system.

Pipes from U-drains in the digester and chemical house also go to the surge pond. These flows will also need to be collected and diverted into the white water system. Spills in the chemical house shouldn't be too big of a concern since this would be green liquor and therefore contain no more BOD than white water.

Once the above is completed, the surge pond becomes a true surge pond, used only for surge storage of influent The above projects should be fairly straight forward and relatively inexpensive.

[illegible] 900

The normal white water volume contained in all of the chests in the mill is roughly one million gallons. Of this about 180,000 is in the white water storage chests. The surge pond can hold about 100,000 gallons. The surge pond is used to hold influent when there are problems with influent pumps and/or the influent line; it also stores influent when the mill discharges water faster then the influent pump can pump it. The surge problem could be solved by a redundant influent system, two pumps and pipe lines with larger capacity pumps. This would allow the mill to run unless power was lost to both influent pumps. But another problem would still exist.

Our normal discharge to waste treatment is 550,000 gallons per day. The three Hi-D stock chests, when full, will contain 565,000 gallons of white water. There have been many incidents where a stock system was shutdown, the Hi D chest run just about empty, then the system started up and the Hi D chest refilled. I will use a worst case scenario as an example. Assume the wood, kraft and broke are at 36 ft, 30 ft, 25 ft, and both white water chests are close to full. Because of digester problems the wood level drops to 6', the increased pull on kraft and broke drops these levels to 10 and 5 ft. respectively. The chests give up a total of 348,000 gallons Because there is no room in the WW chests this volume goes out to waste treatment along with the normal flow. Once things are running again, the Hi D chests begin to fill. Once the kraft and wood reach their previous levels, 234,000 gallons of water has been put into them. The white water chests only store about 180,000 so the short fall is made up by adding fresh water to the system. Generally fresh water is added until the white water chests are close to normal levels which means about 200,000 gallons of extra fresh water is added to the system. Net effect, influent flow would be 864,000 gallons on such a day (550,000 + 114,000, (broke chest) + 200,000 (fresh water)). A couple days of this or add this to above average influent flows and the aeration pond is ready to go over its banks.

The ideal solution to this problem is to increase the white water storage chest capacity to about 500,000 gallons. The level in the chest would be controlled at around 200,000 gallons by the waste treatment operator through the influent flow. When upsets as in the above scenario occurred, the chest would absorb the

surge while the Hi D chest levels were dropping, and give this water back up while the chests were being refilled. The waste treatment system would not see large surges or swings in influent day to day because the flow is controlled. If the level would begin to rise or drop over time, the influent flow could be adjusted. There would have to be alarmed levels where automatic controls would close back or open up influent flow in cases of a severe surge or loss of white water. The benefits to waste treatment under this set up are obvious.

Two items that can not be addressed by any solution outside of reconditioning the surge pond are broke chest overflows and white water chest draining. Broke chest overflows would have to be reduced as much as possible and/or be dumped on the ground and cleaned up as needed. White water chest draining would become a much slower process, limited to the influent pump(s) capacity; although under the chest expansion solution the chest level could be dropped in the days prior to a shutdown.

These are my thoughts on how to handle the surge pond closure. I would like to be involved in the final decision making on this project.

cc: B. Buchanan
K. Kling
J. Blauwkamp

kj

ORM 561

memo / AVAN CORPORATION MEN01452

TO: Gary, Keith, Tom, Al

DATE: August 20, 1986

SUBJECT: Surge Pond Closure

FROM: John Bonham

Per our discussion on August 19, the Technical Department will be developing a plan for closure of the surge pond next year. During our brainstorming session some good ideas emerged (not counting Keith's idea about the 10 foot pulper). Below is a summary of individual responsibilities and some possibilities to investigate.

1. Krofta Rejects (Tom)
   A. Investigate use of DSM screen to thicken Krofta rejects and drop them into dumpster.
   B. Run trial putting rejects to Johnsson screen at dumpster.
   C. Move Krofta to dumpsters and skim rejects off at surface instead of scooping.
   D. Look @ hydradenser if the above are not feasible.

2. Selectifier Screen Rejects (Tom)
   A. Run trial putting screen rejects to little wood chest.
   B. Use as dilution to primary refiners.
   C. Thicken over DSM screen and drop into little wood chest.
   D. Run into outlet of #4 refiner (fan pump suction).

3. Digester U-drains (1st floor and basement) (Gary)
   A. Curb digester @ ground floor to prevent spill on ground.
   B. Install a sump with pump to put everything from U-drains into white water chest.
   C. Pipe digester U-drains to existing sump at end of welding shop and thence into white water chest.

4. Chemical House U-drains(Gary)
   A. Curb chemical house.
   B. Pipe into digester U-drains and therefore either into new sump in digester or existing sump by welding shop, and thence into the white water chest.

5. Beater room sump(Gary)
   A. Install pump and pipe into little white water chest.
   B. Put large size screen somewhere before sump to catch large debris.
   C. Take divider out of basement U-drain and let it all flow to sump by welding shop and thence into white water chest.

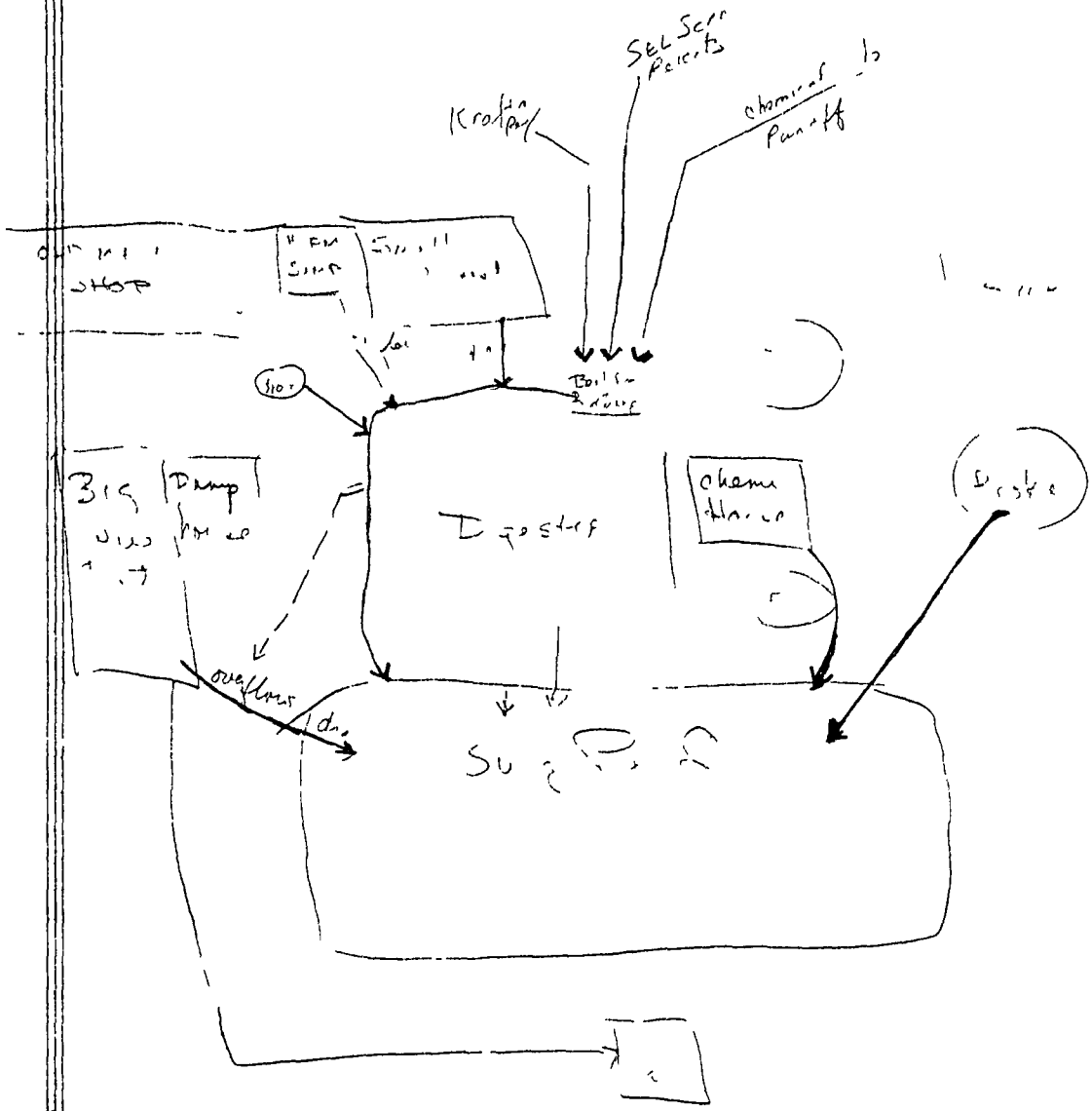
6. Broke Chest Overflow(Tom)
   A. Look @ procedures to prevent problems with broke inventory.
   B. Containment/handling if the unthinkable happens.
7. Influent handling/storage(Keith & Al)
   The whole white water storage and pumping set-up needs to be examined, including:
   A. White water storage needs - Less than a once a year incident should not be considered.
   B. Positioning of pumps - at chest or in surge pit.
   C. Power sources for pumps.
   D. Influent line reliability
   E. Control of level/effluent flow.
   F. Draining of white water chest during downs
8. Runoff from chemical silo into Sec. Fiber basement.
   This was mentioned, but not discussed in detail. Gary, please check out how difficult this looks, and see me before our next meeting if it looks fairly involved.

Please feel free to consult myself or each other for ideas. At our next meeting at 9:00 on September 9th, I would like to be able to tie most of these down. Also consider how we can handle a cleanout of all secondary fiber chests when the sumps no longer pump to the beater room. Thanks.

kj

Screen over
compactors

MEN01454



Phase I

Phase II

1) Kraft [illegible] system
2) Chem Sels [illegible]
3) [illegible]
4) [illegible]
5) oil DKP where going to
6) Drum in digester where do they go

New Weir Box 001 Weir

MEN01455

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
IVISION OF LAND RESOURCE PROGRAMS

PERMIT FOR
MINOR PROJECT ACTIVITIES

Permit No 88-12-325
Date Issued August 17, 1988
Extended
Revised
Expires December 31, 1989

permit is granted under provisions of.

- [X] The Inland Lakes and Streams Act, 1972 P.A. 346, as amended.
- [ ] The Great Lakes Submerged Lands Act, 1955 P A 247, as amended.
- [ ] Flood Plain Regulatory Act, 1929 P A 245 as amended
- [ ] The Goemaere-Anderson Wetland Protection Act, 1979 P A 203

Consumers Power Company
Attn. D.2. England
4000 Clay St. S.W.
Wyoming, MI 49508

OTHER (Specify other authority under which permit is issued.).

d Activity

ce approximately 1 cubic yard of clean washed riprap to construct a 4-inch P.V.C. storm er discharge.

ourse Affected	County	Town	Range	Sect	Sub and Lot Number
amazoo	Allegan	1N	12W	14	

L WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS ATTACHED HERETO. Authority nted by this permit is subject to the limitations and conditions marked with an (x) or (✓) below and to the limitations and tions appearing on the reverse side of this permit.

- [ ] Unless authorized by attached plan, seawall bulkhead or revetment structure shall not extend waterward of existing water s edge or the ordinary water s edge, whichever is most landward Structure shall be in place prior to placement of backfill materials
- [X] No fill or dredge material shall be placed in a wetland or in such a manner as to impede surface water flow unless authorized by the attached plan
- [ ] Fill or backfill shall consist of clean inert materials which will not cause siltation nor contain soluble chemicals or organic matter which is biodegradable All fill shall be contained in such a manner as not to erode into any watercourse or wetland All raw banks shall be stabilized with sod, seed, fertilizer and mulch or riprapped as necessary to prevent erosion
- [ ] All dredge spoils and excavated materials, including organic and inorganic soils, vegetation and debris shall be placed above the ordinary high water mark, leveled and stabilized with sod and/or seed fertilizer and mulched in such a manner as not to erode into any waterbody or wetland
- [ ] All beach fill shall be clean sand or washed pea gravel Beach fill shall not exceed six inches in depth The location of the existing shoreline contour shall not be altered Beach fill shall not extend below the four foot underwater contour
- [ ] To conform with 1929 P A 245, as amended, neither spoils nor dikes are authorized to be placed between the pond, lagoon, basin or artificial waterway and the existing stream channel No connection of the pond, lagoon basin or artificial waterway to the stream is authorized
- [X] Dredging is not authorized by this permit.
- [ ] Filling is not authorized by this permit
- [ ] All shore protection structures must be located within _____ feet of the toe of the bluff
- [X] Other All riprap shall be clean rock or broken concrete free of any rerod, asphalt or other polluting materials.

DLRP Lansing [X] Newkirk Electric
DLRP Region/District
Public Health [X] City of Otsego
Act 347 CEA [ ] Water Mngt Div
USCE & USFWS [X] District Law

DAVID F. HALES
Director Department of Natural Resources

By Jeffery A. King
Jeffery A. King
DIVISION OF LAND RESOURCE PROGRAMS

MENASHA CORPORATION
PAPERBOARD GROUP

June 27, 1986

Steve Batts
Orchard Hills Sanitary Landfill
3378 Hennessey
Watervliet, MI 49098

Dear Steve,

Please find attached the results of our testing on the material we would like to place in the Orchard Hills Class II Landfill. We would like to use your landfill for material from the sites labeled #2 and #3. This material is primarily dirt with some amounts of the following substances mixed in: asphalt, asphalt covered paper, Isopar, and industrial-type oils. The test results indicate that this material is clearly non-hazardous. We have approximately 1000 yards to dispose of, and we would very much appreciate your quick consideration of this request.

If you have any questions or require any further information, please call me.

Sincerely,

Menasha Corporation
Otsego Paperboard Division

John T. Bonham
Technical Manager

cc: John Blauwkamp
Sandra Jones

kj

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616 692-6141

MEN01457

memo / AVAN CORPORATION

TO: Memo to File

DATE: June 25, 1986

SUBJECT:

FROM: John Bonham

Results of EP Toxicity Testing on Soil Samples Taken June 12, 1986

Material	Site #1 top (mg/l)	Site #2 Isopar (mg/l)	Site #3 U-drain (mg/l)	Site #4 Top Block (mg/l)	Hazardous Limit (mg/l)
Cyanide	<0.2	<0.2	<0.2	<0.2	20
Chromium	0.2	Non-Det	0.1	0.24	5
Silver	0.08	0.05	0.08	0.06	5
Zinc	0.70	1.1	0.94	1.0	500
Lead	Non-Det	0.2	2.0	0.24	5
Copper	<0.01	0.01	0.01	0.01	100
Cadmium	0.04	0.01	0.04	0.04	1
Barium	Non-Det	0.4	0.25	0.4	100
Mercury	Non-Det	Non-Det	Non-Det	Non-Det	0.2
Selenium	Non-Det	Non-Det	Non-Det	Non-Det	1
Arsenic	Non-Det	Non-Det	Non-Det	Non-Det	5
Flash Point (Degrees F)	>200	>200	>200	>200	140

There were no peaks that matched the EP 601 and 602 scans for purgeable halocarbons. Testing for PCB's was also negative on all 4 samples.

Testing performed by Prien & Newhof in Grand Rapids, MI.

kj

memo / AVAN CORPORATION MEN01458

TO: Distribution

DATE: February 1, 1988

SUBJECT: Surge Pond Closure
Meeting On 1/27/88

FROM: Larry G. Hill
Project Engineer

A meeting was held on 1/27/88 to discuss options for handling broke during normal operation and during an emergency.

The following items were presented:

1) Procedure changes for handling broke as the level rises in broke chest. The current procedure is:

   a) At 20 ft. increase broke flow to #1 pm to 500 gpm.

   b) At 30 ft. slow #1 pm down.

   c) At 36 ft. the overflow pipe is opened to the surge pond.

   It was suggested that the following changes be made to the existing procedure.

   a) At 20 ft. the broke flow to #1 paper machine would automatically increase to 500 gpm. An alarm would sound to alert the operator the change has been made.

   b) At 34 ft. the total flow of broke, wood and kraft would be increased to the machine chest by raising chest level set point.

   c) At some elevation a high alarm would sound to alert the operator.

Mark Reed is going to discuss these procedural changes with his foremen and advise of their acceptance.

2) Increase broke consistency. On February 4th, the broke consistency in the press pit pulper is going to be increased 1/4 %. The Technical Department will complete some tests to check consistency and Mark will determine how it has affected runability of the pulper (it won't impact machine runability).

3) Other ways to use broke.

a) Using broke as the Impco sweetener instead of kraft. Gary Roys will check to see if equipment is in place and a test can be run. Gary will report at the 2/3/88 meeting. Would need about 20 ft, of pipe to try this.

b) Meter into the white water system. This alternative is possible but not a recommended option.

c) Meter into the Little Wood Chest. This alternative is possible, but would be used when all else fails.

4) Broke overflow.

a) Jerry DeVisser will look into using/converting the old chipper room basement into a broke overflow area. Jerry will report at the 2/3/88 meeting.

b) Keith Kling will look into overflowing the tank to the east. Keith will evaluate the use of curb and asphalt versus the use of an earth berm and sod cover. Keith will report at the 2/3/88 meeting.

Copies: John Bonham
Keith Kling
Gary Roys
Al Switzenberg
Dave Merkel
Mark Reed
Jerry DeVisser

MEN01460

MENASHA CORPORATION

PAPERBOARD GROUP

July 20, 1988

Orchard Hill Landfill
3378 Hennesey Road
Watervliet, MI. 49098

Dear Sir:

I would like to receive approval for disposal of several materials to your Class II landfill.

1. We have about 50 yards of clean sand mixed with asphalt.

2. We have several barrels of wood chips, oil dry, soil and oil similar to that disposed of in November of 1987. A copy of that letter and MSDS sheet for Mobil DTE13 hydraulic oil is attached.

3. We have approximately 400 yards of asphalt covered paper, Isopar, and industrial-type oils mixed with sand. This was taken from the same area as the material we hauled to your landfill in June 1986. A copy of that letter and EP toxicity test results are attached.

All of this material is non-hazardous. Pending your approval, we would like to begin hauling this material about July 27, 1988.

If you have questions or require any additional information, please contact me (616) 692-6141.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith B. Kling
Environmental Supervisor

Enclosures

cc: John Bonham
Larry Hill
/ac

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE. 616-692-6141

MEN01461

MENASHA CORPORATION
PAPERBOARD GROUP

August 15, 1988

Brad Keeler
P.O. Box 495
Plainwell, MI. 49080

Dear Brad,

At the end of September we will be removing a pond from service on our mill property. About mid-September the pond will have been cleaned of fiber and loose dirt. At that time, the area will need to be filled back in. If you would be interested in bidding on filling this, please use the following criteria.

1) The pond size is approximately 120 ft X 70 ft X 17 ft. This would require bringing in 6400 yards of fill if a compaction value of 20% is used.

2) Since the exact depth and amount of loose dirt to be removed is presently unknown, the bid should be based on a per yard basis.

3) Compaction should be accomplished to make the area suitable as a parking lot. All fill should be compacted to 95% of maximum density as determined by ASTM D1557. Putting down sand in 6 inch layers followed up by a vibrating compactor would be the normal method of accomplishing this.

4) Sand fill will be available at the North side of the mill property. This will need to be hauled to the job site by you.

I anticipate that the pond will be cleaned out and ready to backfill about October 1.

If you would like to further discuss this project or see the site, I am available at 692-6141. A decision on awarding this bid will be made by September 10.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith B. Kling
Environmental Supervisor

cc: John Bonham
Larry Hill
/ac

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616 692 6141

Kling		Surge Pond Dirt removal	REa 84-974
NOTIFY		TO BE USED FOR	ACCOUNT NO

MEN01462

PURCHASE ORDER
MENASHA CORPORATION

THIS P.O. NUMBER MUST APPEAR ON ALL INVOICES, PACKING LISTS, SHIPPING CARTONS, ETC.

№ 483339

ND INVOICES IN DUPLICATE. BILLS OF LADING, ACKNOWLEDGMENTS AND CORRESPONDENCE TO CATION INDICATED BELOW:

OTSEGO MILL
P.O. BOX 156
OTSEGO, MICHIGAN 49078-0156 PHONE (616) 692-8141

SHIP TO LOCATION BELOW, MARKED ATTENTION →

☐ **OTSEGO MILL**
320 N FARMER ST.,
OTSEGO, MICHIGAN 49078

☐

VENDOR

BRAD KEELER
PO BOX 495
PLAINWELL, MI 49080

PLEASE ENTER OUR ORDER FOR THE FOLLOWING ARTICLES SUBJECT TO PRICES, TERMS AND CONDITIONS SET FORTH BELOW AND ON THE REVERSE SIDE HEREOF

ORDER DATE	MATERIAL REQUIRED DATE	TERMS	F O B	SHIP VIA
9/7/88	9/13/88	Net 30	Otsego	

☐ CONFIRMING VERBAL ORDER TO:

SALES TAX STATUS ▶ ☐ TAX APPLIES TO ALL ITEMS ON THIS ORDER ☐ TAX APPLIES ONLY TO ITEMS "X" BELOW ☐ EXEMPT INDUSTRIAL PROCESSING RESALE - LICENSE -

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
		Provide all necessary labor and equipment to clean loose material from the bottom and sides of the surge pond. All metal and wood to be separated and put to a dumpster. All other material to be disposed of in a location determined by the Technical Department and spread as instructed.		
		contractor rate as follows:		
		crane $60.00/hour x 8 hours	$480.00/day	
		truck $37.50/hour x 8 hours	$300.00/day	
		It is estimated that 3 days of dredging will be required. The total estimated cost is $4,500.00		
		"The Contractor agrees to abide by Menasha Corporations "SUPPLEMENTARY TERMS AND CONDITIONS" and those terms and conditons are an integral part of this Purchase Order."		

ITEM	DATE REC D	QTY REC D	DATE REC D	QTY REC'D	DATE REC'D	QTY REC D

The above material has been received in satisfactory condition.

Date _____ Signed _____

STATEMENT

KEELER EXCAVATING
P.O. BOX 495
PLAINWELL, MI 49080
685-1334

JAN 3 1989

DATE December 26, 1988

ACCOUNT NO. REa 84-974

MEN01463

PURCH

№ 483339

TO Menasha Corporation
320 N. Farmer St.
Otsego, Michigan 49078

Klemy

DETACH AND RETURN UPPER PORTION WITH YOUR REMITTANCE $

SHIP VIA

EXEMPT - INDUSTRIAL PROCESSING
RESALE -
LICENSE -

			UNIT PRICE	TOTAL PRICE
	Removing fiber from surge pond with crane and hauling across road on Menasha property with 2 dump trucks.			
8 hrs	2trucks and crane	$110.00		$880.00
	total----------			$880.00
	P.O.# 483339 Net 10 days			

$480.00/day
$300.00/day

TOPS FORM 3809
LITHO IN U.S.A.

YOUR CHECK IS YOUR RECEIPT

DATE REC'D	QTY REC'D	DATE REC'D.	QTY REC'D	DATE REC'D	QTY REC'D

The above material has been received in satisfactory condition.

Date

Signed

SIGNED BY	DELIVER TO	TO BE USED FOR	ACCOUNT NO
Kling		Surge Pond Closure	84-974

NOTIFY

MEN01464

PURCHASE ORDER

MENASHA CORPORATION

THIS P.O. NUMBER MUST APPEAR ON ALL INVOICES, PACKING LISTS, SHIPPING CARTONS, ETC.

PURCHASE ORDER № 483453

ND INVOICES IN DUPLICATE. BILLS OF LADING, ACKNOWLEDGMENTS AND CORRESPONDENCE TO CATION INDICATED BELOW:

OTSEGO MILL
P.O. BOX 156
OTSEGO, MICHIGAN 49078-0156 PHONE (616) 692-6141

SHIP TO LOCATION BELOW MARKED ATTENTION

☐ OTSEGO MILL
320 N. FARMER ST.
OTSEGO, MICHIGAN 49078

☐

VENDOR

BRAD KEELER
PO BOX 495
PLAINWELL, MI 49080

PLEASE ENTER OUR ORDER FOR THE FOLLOWING ARTICLES SUBJECT TO PRICES, TERMS AND CONDITIONS SET FORTH BELOW AND ON THE REVERSE SIDE HEREOF.

ORDER DATE	MATERIAL REQUIRED DATE	TERMS	F.O.B.	SHIP VIA
9/14/88	9/22/88	Net 30	Otsego	

☐ CONFIRMING VERBAL ORDER TO:

SALES TAX STATUS ☐ TAX APPLIES TO ALL ITEMS ON THIS ORDER ☐ TAX APPLIES ONLY TO ITEMS "X" BELOW ☐ EXEMPT - INDUSTRIAL PROCESSING RESALE - LICENSE -

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
		Fill surge pond with clean fill obtained from our North property. Compact to 95% of maximum density as determined by ASTM D1557. It is estimated that approximately 6500 yards of fill will be needed for this project.	$2.00/yd	

"The Contractor agrees to abide by Menasha Corporations "SUPPLEMENTARY TERMS AND CONDITIONS" and those terms and conditons are an integral part of this Purchase Order."

ITEM	DATE REC'D	QTY REC'D	DATE REC'D	QTY REC'D	DATE REC'D	QTY REC'D

The above material has been received in satisfactory condition.

Date _____ Signed _____

Burmah

Burmah Technical Services, Inc
Analytical Laboratories Division

408 Auburn Avenue
Pontiac, Michigan 48058

313-334-4747

Menasha Corporation
320 N. Farmer Street
Otsego, MI 49078
Attn: Gary Roys

August 19, 1988

PROGRAM: SURGE POND CLOSURE

Date Received: 7-29-88

ALD Number: 41921

Client I.D.: Soil Under East Side of New Whitewater Tank

Physical Description: 100% Dark Brown Soil

ASTM Leachate:

pH	7.0
Total Dissolved Solids, mg/l	530
Chloride, mg/l	4
Sulfate, SO_4, mg/l	290
Nitrate Nitrogen, as N, mg/l	1.8
Arsenic, As, mg/l	<0.005
Barium, Ba, mg/l	0.10
Cadmium, Cd, mg/l	<0.01
Chromium, Cr, mg/l	<0.02
Copper, Cu, mg/l	0.04
Iron, Fe, mg/l	0.55
Lead, Pb, mg/l	<0.05
Magnesium, Mg, mg/l	7.6
Mercury, Hg, mg/l	<0.0005
Selenium, Se, mg/l	<0.005
Silver, Ag, mg/l	<0.02
Zinc, Zn, mg/l	0.06

700 grams of solid was leached into 2800 mls of deionized water.
Final pH after 48 hours of leaching was 7.0.

surge.pnd/la

Susan K. Scott
Laboratory Supervisor

Rerouting drain line from CPCo sub to river.

MEN01466

Drawing of catch basin.
show separator.

KAMERON J. JORDAN
DISTRICT REPRESENTATIVE
LAND & WATER MANAGEMENT DIVISION
(616) 685-6851

P O BOX 355 621 N 10TH STREET PLAINWELL MI 49080 DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DNR
File # 88-12-325

MENASHA CORPORATION
PAPERBOARD GROUP

August 19, 1988

Randy Blank
Michigan Disposal Service
100 E. North Street
Kalamazoo, MI. 49007

Dear Randy:

I would like to receive approval for disposal of some soil at your Class III landfill located at Cork Street. The soil consists of sand, asphalt, a few wood chips and asphalt covered paper. We have approximately 350 yards of this material. A composite sample of this material was tested by the ASTM Leachate method. The results are as follows:

ph -	7.23
Total Dissolved Solids -	530
Chloride -	3.7
Sulfate -	290
Nitrogen N -	1.8
Arsenic -	<0.005
Barium -	0.10
Cadmium -	<0.01
Chromium -	<0.02
Copper -	0.04
Iron -	0.55
Lead -	<0.05
Magnesium -	7.6
Mercury -	<0.0005
Selenium -	<0.005
Silver -	<0.02
Zinc -	0.06

We believe this material meets the definition of a Type III waste as outlined in Michigan Act 641. Pending your approval, I would like to haul this material the week of August 22.

If you have any questions or require additional information, please contact me at 692-6141.

Sincerely,

Otsego Paperboard Division

John T. Bonham
Engineering/Technical Services Manager

cc: Keith Kling
Larry Hill

/ac

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616 692 6141

MEN01468

Drains in Digester Building

.2 mg/L
200 ppb

1. Roof drains to Surge pond.
2. 4th floor 2-drains to pump house to surge pond
3. 3RD floor 2-drains to pump house to surge pond.
4. Mezzine roof drains to pump house to surge pond
5. Transfer pump house drain to ~~chemical~~ wash hood sump
6. 2ND floor drains to pump house to surge pond
7. Digester 1ST floor drain to surge pond

MENASHA CORPORATION
PAPERBOARD GROUP

July 6, 1988

Curtiss B. Meyer, P.E.
Senior Engineer
Consumers Power Company
2500 E. Cork Street
Kalamazoo, MI. 49001

Dear Mr. Meyer:

By virtue of this letter, Consumers Power Company is authorized to use Menasha property to run a drain line from its Menasha Sub WD937 to the Kalamazoo River. The Menasha property used will be the minimum necessary to route the drain line consistent with good engineering design. Consumers Power is responsible for coordinating the installation with appropriate Menasha personnel to insure that any existing underground lines are not disturbed.

Menasha assumes no responsibility for any material discharged through this drain line, or for obtaining appropriate discharge permits from regulatory agencies. The surge pond where the drain line currently runs will be eliminated by October, so the new drain line needs to be installed before then.

Please call if you have any questions.

Sincerely.

Otsego Paperboard Division

John T. Bonham
Engineering/Technical Services Manager

cc: Keith Kling
Larry Hill

/ac

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616 692 6141

MDNR WASTE TREATMENT SURVEYS

DOCUMENT #41

MEN01471

Michigan Water Resources Commission (MWRC) - Bureau of Water Management, "Report of an Industrial Wastewater Survey Conducted at Menasha Corporation Paperboard Division, May 20-22, 1974," July 29, 1974.

MICHIGAN WATER RESOURCES COMMISSION
BUREAU OF WATER MANAGEMENT
ENVIRONMENTAL PROTECTION BRANCH
DEPARTMENT OF NATURAL RESOURCES

Report of an
Industrial Wastewater Survey
Conducted at
MENASHA CORPORATION
Paperboard Division
Allegan County
Otsego, Michigan
May 20-22, 1974

Purpose of Survey

Wastewater monitoring was performed during two consecutive twenty-four hour survey periods at Menasha Corporation starting Monday, May 20, 1974.

The purpose of the survey was to determine the quality and quantity of wastewater being discharged by Menasha Corporation to the Kalamazoo River. This survey was conducted with participation by U.S. - EPA.

The results of this survey will be compared to the restrictions set forth in the company's National Pollutant Discharge Elimination System Permit, monthly operator reports and the results of the previous survey conducted at this plant in September, 1970.

Survey Summary

Menasha Corporation discharged a combined total of 6.1 and 6.3 MGD of process and cooling wastewaters from their four outfalls during each respective survey period.

Quantitative analyses of the composite samples collected revealed Menasha Corporation was in compliance with the daily maximum effluent limitation set forth in the company's NPDES Permit during the survey periods. The daily average loadings of BOD_5 during both survey periods and suspended solids during the first period exceeded the stated limits for Outfall 003. (See Table 6)

The company's Monthly Operating Report for May 1974 revealed results similar to the survey's for pH, temperature and phenols. Flow measurements were reported lower in all instances as were most suspended solids loadings. BOD_5 loadings were generally reported higher while all reported settleable solids concentrations and loadings were lower. Total phosphorus analyses also appeared somewhat lower in the company's report. (See Table 7)

In comparison with the previous survey conducted at Menasha Corporation in September 1970 with the results of the normal production encountered during the second survey period, paper production has increased almost 10% while the treated process flow has increased 30%, BOD_5 loadings have increased 15%, and COD loadings have decreased 25%. Total solids loadings are up 25%, suspended solids down 50% and settleable solids are down 60%. Phenol concentrations are down 90% while sulfates have remained essentially the same. (See Table 8)

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated cardboard medium through the sulfite pulping process. The mill operates 24 hours a day, 5 days per week employing 200 employees. Product off the paper machines varied for the plant's production day from 356 tons on Monday, to 275 tons on Tuesday and back to 357 tons on Wednesday.

Processes begin at the mill when hardwood logs enter the chipper. The chips are sent to the digester which breaks them down with a sulfite cooking liquor consisting of sodium sulfite, soda ash and sometimes, sodium hydroxide for a buffer. The chips are further broken down through refiners. From the refiners, the pulp is conveyed through mechanical presses which removes 60% of the cooking liquor.

The spent liquor is stored in a 500,000 gallon liquor storage pond or a separate storage tank. A portion of liquor is concentrated in evaporators and sold as a sodium sulfate liquor to a Kraft mill. Excess liquor is either given away as a roadbinder or incinerated in the mill's new fluidized bed spent liquor incineration system.

From the presses, the pulp enters the stock bin and is sent through primary refiners to the wood chest where it is blended with recycled scrap paper and broke from the paper machines. The stock is further refined before going through the inlet fan pump to the head box and the two Fourdrinier paper machines.

Water Supply, Wastewater and Treatment

Menasha Corporation obtains its process and a portion of their cooling water from either of five wells or the City of Otsego. Powerhouse cooling water is derived from the Kalamazoo River while the plant's domestic supply is obtained from the city. The company uses a phosphate conditioner at their well heads for calcium and iron treatment. An ammonia-bioside is also added to inhibit bacteria growth. Freshwater treatment is performed in the plant for water used in the boilers.

Cooling water is used throughout the papermaking process and discharged through three of the plant's four outfalls to the Kalamazoo River. Outfall #030138(001) discharges cooling water from the primary refiners, rewinder, driver aftercooler and #1 machine oil cooler plus roof drainage. Outfall #030139(002)

discharges the winder and digester cooling waters plus the contaminates seal water off the #1 machine to the small aeration pond (pilot plant).

Powerhouse cooling water, Outfall #030054,combines with the treated process effluent, Outfall #030053, prior to discharging through Outfall 003. Water softener backwash plus the fly and bottom ash from the powerhouse along with miscellaneous floor drains discharge through the ash-lime pond, Outfall #030055(004 to the river.

The wastewater treatment system illustrated on Figure 1 receives its influent from the overflow of both the old 36,000 and the new 144,000 gallon white water tanks, surge pond overflow and the spent liquor incineration system. The excess from the two white water tanks enters a surge pit and is either pumped to the treatment system or the surge pond. The surge pond also receives influent directly from sumps connected to the new digester's cooling and wash-up water, plus the pulper and beater room sewers.

The treatment system consists of a 10 to 15-day retention, aeration lagoon which contains 5 - 100 hp aerators. Nutrients are added to the lagoon's influent at a daily rate of 200 pounds nitrogen and 60 pounds phosphorus. A 25,000 gallon capacity clarifier follows the aeration pond. A polymer is added to the clarifier influent as a coagulating aid. The clarifier effluent is discharged through the company's weir and combines with the turbine cooling water prior to discharge through Outfall 003.

Excess sludge which is not sent back to the lagoon is removed from the clarifier througnout the day and disposed of at a company landfill located north of the plant.

The two settling ponds located next to the lagoon are utilized on a stand-by basis. Emergency ponds are also located east of the aeration lagoon for emergency liquor containment.

Survey Procedure

A 12-inch rectangular weir with end contractions was installed by staff members in a manhole located on the Farmer Street storm sewer to monitor Outfall #030138(001). A 12-inch rectangular weir permanently installed by the company was utilized for Outfall #030134(002), as was the company's weir on the treatment system effluent, #030053, to Outfall 003. A 90° v-notch weir was installed by staff on the ash-lime pond Outfall #030055(004).

Each weir was equipped with a water level recorder and an automatic sampler. The water level recorder provided a continuous account of the liquid level or head above the crest of each weir on a head versus time graph for the duration of each survey period. The total volume of wastewater over the weir during the survey period was computed from the graph. The automatic samplers obtained samples proportional to the instantaneous flow over each weir at selected intervals. The

average intervals were 10 minutes for Outfall 001, 8 minutes for 002, 12 minutes for the treated effluent and 3 minutes for 004. The individual samples were deposited in a clean container to make up a composite sample representative of the total flow over each weir during the survey period.

A continuous sample was collected near the plant's Kalamazoo River intake and also the turbine cooling water by submerging a container into the flow and allowing the air in the container to be displaced with liquid at a constant rate for the duration of the survey period. Assuming a uniform flow this sample would be representative of the respective flows during the survey period.

Individual grab samples were collected from all outfalls and the river intake at periodic intervals for selected physical chemical and bacteriological analyses.

All samples were collected and preserved as given on Table 1.

Table 1 Sample Type and Preservation

Parameters	Sample Type	Preservative
General Chemistry	Composite & Grab	Cooled at 4°C
Nutrients	Composite	5 drops $CHCl_3$/125 ml Cooled at 4°C
Total Metals	Composite	10 ml 1:1 HNO_3/liter
Phenols	Composite	8 ml 10% $CuSO_4$ + H_3PO_4/liter Cooled at 4°C
Oil & Grease	Grab	1 ml 1:1 H_2SO_4/250 ml Cooled at 4°C
Bacteria	Grab	Cooled at 4°C
Dissolved Oxygen	Grab	Fixed on site
Hydrocarbons	Grab Composite	100 ml hexane/gallon

The composite samples and grab samples were transported to the Bureau of Water Management laboratory located in Lansing for selected quantitative physical and chemical analyses. The following formula was used to compute the pounds per day of various wastewater constituents discharged. The formula makes use of the concentrations from the quantitative analysis and the monitored flow to yield the pounds per day as follows:

lbs/day = flow (mgd) x conc. (mg/l) x unit weight of water (8.34 lbs/gal).

The bacteria samples were transported to the Michigan Department of Public Health, Bureau of Laboratories located in Lansing for selected quantitative bacteriological analyses.

Comments

Menasha Corporation had permanent weirs in place on Outfall 001, Outfall 002 and their treated process effluent. The powerhouse cooling water and ash-lime discharge, Outfall 004, contained no means for measuring flows. The weir on Outfall 001 was located where the storm sewer discharges into the river and was submerged during the survey. The backwater of the weir on Outfall 002 was too turbulent, therefore, baffles were installed for increased accuracy. The lagoon effluent's 24-inch rectangular weir with end contractions possessed a totalizer calibrated for a weir without end contractions. Theoretically, this totalizer is recording flows about 5% greater than those measured in the survey.

In accordance with the permit, grab samples are being collected from Outfalls 001 and 004 and an automatic sampler obtains the required composite for the treated effluent to 003. Outfall 002 was being grab-sampled and not composited as specified in the permit.

All required analyses except phenols and total phosphorus (which are performed by a private company) are conducted in the plant according to the permits test procedures.

Further review of the company's NPDES Permit with management brought forth several subjects of concern: By-passes are located on the small aeration pond discharge and also from the surge pit pumphouse. A portion of the powerhouse cooling water is believed to be bled off through another discharge pipe. Contaminent facilities for spent liquor and fuel were questioned and will be presented in the company's pollution incident prevention plan.

The two settling ponds located adjacent to the aeration lagoon are intended by the company to be integrated in the future back into the treatment system.

Threatening weather at the end of the first survey period concluded the monitoring on the storm sewer Outfall #030138(001). The storm blew over with little precipitation.

Table [illegible] [illegible]itative analyses of the 24-hour composite samples collected from Menasha Corporation's process [illegible] cooling discharges, to the Kalamazoo River and also the river intake to determine the concentration of the wastewater constituents present in the samples, plus the computed pounds per day (lbs/day) of these constituents being discharged. Also noted are the highest and lowest flow rates recorded during the respective survey periods.

Outfall	Lagoon Effluent - #030053 (to 003)				Turbine Cooling - #030054 (to 003)				Combined (003)	
Survey Period	#1		#2		#1		#2		#1	#2
From	7:20 pm, 5-20-74		6:50 pm, 5-21-74		7:30 pm, 5-20-74		6:30 pm, 5-21-74		5-20-74	5-21-7
To	6:40 pm, 5-21-74		3:25 pm, 5-22-74		6:30 pm, 5-21-74		3:30 pm, 5-22-74		5-21-74	5-22-7
Total flow monitored (gal)	722,000		806,000							
Computed flow rate (mgd)	0.741		.935		4.32*		4.32*		5.06	5.26
Highest flow rate (mgd)	0.819 @ 10:09am		.991 @ 10:03am							
Lowest flow rate (mgd)	0.06 @ 7:50pm		.132 @ 11:03am							
pH	8.0		8.1		8.0		8.0			
Color	14500		12000		30		30			
Turbidity	600		210		6		4			
	mg/l	lbs/day	mg/l	lbs/day	mg/l	lbs/day	mg/l	lbs/day	lbs/day	lbs/day
5-day BOD	700	4330	1000	7800	<5	180	<5	180	4510	7980
COD	8500	52500	5200	40500	21	757	13	468	53257	41000
Total solids	8864	54800	9788	76300	368	13300	304	10900	68100	77200
Total volatile solids	4080	25200	5728	44700	172	6200	120	4300	31400	49000
Total nonvolatile sol.	4784	30000	4060	31700	196	7060	184	6630	37060	67330
Suspended solids	820	5070	115	897	14	504	8	288	5574	1185
Suspended volatile sol.	710	4390	94	733	12	432	--	10700	4822	11433
Suspended nonvolatile sol.	110	680	21	164	2	72	8	4320	752	4484
Dissolved solids	8044	49700	9673	75400	354	12800	296	6341	62500	81741
Dissolved volatile sol.	3370	20800	5634	43900	160	5760	120	4320	9130	48220
Dissolved nonvolatile sol.	4674	28900	4039	31500	194	6990	176	6340	37840	37840
Settleable solids	60	371	15	117	--	--	--	--	371	117
Soluble orthophosphate-P	<1	--	<0.2	--	0.02	0.72	0.02	0.72	--	--
Total phosphorus-P	5.2	32.1	3.6	28.0	0.06	2.16	0.06	2.16	34.2	30.0
Nitrate nitrogen-N	<1	--	8.0	62.4	0.48	17.3	0.47	16.9	--	79.3
Ammonia nitrogen-N	4.0	24.7	1.8	14.0	0.02	0.72	0.02	0.72	25.4	14.7
Organic nitrogen-N	56	346	52	405	0.71	25.6	0.52	18.7	371	423.7
Sulfates (SO_4)	1800	11100	I	I	72	2600	74	2670	--	2670
Sulfites (SO_3)	<10	--	<12	--	0.5	--	<0.5	--	--	--
Phenols	0.18	1.1	.18	1.40	<0.02	--	<0.02	--	2.2	--
Chromium (Cr)	0.24	1.48	0.10	0.78	0.01	0.4	<.01	--	1.9	--
Copper (Cu)	0.10	.618	0.03	0.23	<0.01	--	0.01	0.36	--	0.5[illegible]
Nickel (Ni)	<0.05	--	<0.05	--	<0.05	--	<0.05	--	--	--
Zinc (Zn)	0.54	3.34	0.28	2.18	<0.011	1.44	<0.01	--	4.7	--
Lead (Pb)	0.40	2.47	0.40	3.1	<0.05	--	<0.05	--	--	--
Titanium (Ti)	<1	--	<1	--	<1	--	<1	--	--	--

* Turbine cooling flow rate obtained from company.

I Interferrence in analyses

MEN01477

Table 2 (continued)

Outfall	Ash Pond - #030055 (004)				Aeration Pond - #030134 (002)			
Survey Period	#1		#2		#1		#2	
From	7:00 pm, 5-20-74		6:30 pm, 5-21-74		6:00 pm, 5-20-74		6:15 pm, 5-21-74	
To	6:30 pm, 5-21-74		3:25 pm, 5-22-74		6:00 pm, 5-21-74		3:00 pm, 5-22-74	
Total flow monitored (gal)	97,600		94,600		510,000		462,000	
Computed flow rate (mgd)	0.100		0.109		0.517		0.533	
Highest flow rate (mgd)	0.145 @ 6:30 pm		0.132 @ 8:38 pm		0.577 @ 7:30 pm		0.580 @ 2:	
Lowest flow rate (mgd)	0.389 @ 7:00 pm		0.083 @ 1:02 pm		0.437 @ 1:19 pm		0.491 @ 8:	
pH	8.5		9.2		7.3		7.9	
Color	90		100		425		230	
Turbidity (J.T.U.)	135		74		17		30	
	mg/l	lbs/day	mg/l	lbs/day	mg/l	lbs/day	mg/l	lbs/day
5-day BOD	5	4.2	9	8.1	90	388	66	293
COD	710	91.7	97	88.2	320	1380	180	800
Total solids	908	757	908	825	764	3290	620	2760
Total volatile solids	268	224	268	244	380	1640	300	1330
Total nonvolatile solids	640	534	640	582	384	1650	320	1420
Suspended solids	126	105	216	196	70	302	50	222
Suspended volatile solids	80	66.7	82	75	66	285	21	93
Suspended nonvolatile sol.	46	38.4	134	122	4	17	29	129
Dissolved solids	782	652	692	629	694	2990	570	2530
Dissolved volatile solids	188	157	186	169	314	1350	279	1240
Dissolved nonvolatile sol.	594	495	506	460	380	1640	291	1290
Settleable solids	24	20	102	92.7	36	155	26	116
Soluble orthophosphate-P	0.68	0.56	0.78	0.71	<0.02	--	0.01	0.04
Total phosphorus-P	1.7	1.4	1.4	1.3	0.24	1.0	0.16	0.7
Nitrate nitrogen-N	1.4	1.2	1.5	1.4	0.08	0.34	0.19	0.2
Ammonia nitrogen-N	0.20	0.17	0.14	0.13	0.08	0.34	0.20	0.9
Organic nitrogen-N	1.20	1.0	0.7	0.64	3.0	12.9	2.80	12.5
Sulfates (SO_4)	166	138	210	191	114	492	86	382
Sulfites (SO_3)	1	--	<1	--	<1	--	<1	--
Phenols	0.03	0.025	<0.02	--	0.15	0.65	0.21	0.94
Chromium (Cr)	0.01	0.008	<0.01	--	<0.01	--	<0.01	--
Copper (Cu)	0.01	0.008	0.02	0.018	0.01	0.04	0.01	0.04
Nickel (Ni)	<0.05	--	<0.05	--	<0.05	--	<0.05	--
Zinc (Zn)	0.04	0.04	0.02	0.018	0.05	0.22	<0.01	--
Lead (Pb)	<0.05	--	<0.05	--	<0.05	--	<0.05	--
Titanium (Ti)	<1	--	<1	--	<1	--	<1	--

MEN01478

Table (continued)

Source	Cooling Discharge #0300138 (001)		River Intake	
Survey Period	#1		#1	#2
From	7:15 pm, 5-20-74		7:45 pm, 5-20-74	7:00 pm, 5-20-74
To	6:45 pm, 5-21-74		7:00 pm, 5-21-74	3:45 pm, 5-21-74
Total flow monitored (gal)	393,000			
Computed flow rate (mgd)	0.407			
Highest flow rate (mgd)	0.441 @ 11:56 am			
Lowest flow rate (mgd)	0.321 @ 2:45 pm			
pH	6.9		7.9	7.9
Color	105		30	30
Turbidity (J.T.U.)	1		5	7
	mg/l	lbs/day	mg/l	mg/l
5-day BOD	9	30.5	8	<5
COD	63	214	16	9
Total solids	564	1910	368	300
Total volatile solids	252	855	144	128
Total nonvolatile solids	312	1060	224	172
Suspended solids	20	68	12	13
Suspended volatile solids	18	61	8	6
Suspended nonvolatile solids	2	6.8	4	7
Dissolved solids	544	1850	346	287
Dissolved volatile solids	234	794	140	122
Dissolved nonvolatile solids	310	1050	210	165
Settleable solids	5	17.0	--	--
Soluble orthophosphate-P	<0.01	--	0.03	0.04
Total phosphorus-P	0.13	0.4	0.09	0.09
Nitrate nitrogen-N	0.24	0.8	0.54	0.49
Ammonia nitrogen-N	0.41	1.4	0.05	0.05
Organic nitrogen-N	0.34	1.2	0.69	0.66
Sulfates (SO_4)	76	258	67	66
Sulfites (SO_3)	<1	--	<0.5	<0.5
Phenols	<0.02	--	0.03	<0.02
Chromium (Cr)	<0.01	--	0.01	<0.01
Copper (Cu)	0.01	0.03	0.01	0.01
Nickel (Ni)	<0.05	--	<0.01	<0.05
Zinc (Zn)	0.07	0.24	<0.01	<0.01
Lead (Pb)	<0.05	--	<0.05	<0.05
Titanium (Ti)	<1	--	<1	<1

MEN01479

Table 3 Quantitative analyses of grab samples collected from the Menasha Corporation process and cooling discharges to the Kalamazoo River and the river intake to determine the concentration of select physical, chemical and bacteriological analyses.

Outfall	Time	Date	Temp. °C	pH	D.O. mg/l	BOD5 mg/l	Suspended Solids mg/l	Settleable Solids mg/l	Freon Extractables mg/l	Sulfites mg/l	Total Coliforms cts/100ml	Fecal Coliforms cts/100ml
#030053 (to 003)	3:00 pm	5-21	23°	8.0	0.0	1000	N.S.	602	8	N.S.	2,000,000	10,000
#030053 (to 003)	6:50 am	5-22	23°	8.1	0.0	800	N.S.	60	<2	<0.5	4,000,000	30,000
#030053 (to 003)	3:25 pm	5-22	23°	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	<0.5	N.S.	N.S.
#030054 (to 003)	3:15 pm	5-21	28.5°	8.0	9.7	3	N.S.	N.S.	2	N.S.	N.S.	N.S.
#030054 (to 003)	6:40 am	5-22	26.5°	7.7	5.0	4	N.S.	N.S.	<2	N.S.	N.S.	N.S.
#030055 (004)	3:10 pm	5-21	32°	9.2	0.0	14	66	N.S.	4	N.S.	N.S.	N.S.
#030055 (004)	6:30 am	5-22	27.5°	9.2	0.0	8	153	N.S.	<2	<0.5	N.S.	N.S.
#030055 (004)	3:15 pm	5-22	27°	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	<0.5	N.S.	N.S.
#030134 (002)	3:25 pm	5-21	20.5°	7.7	6.2	64	N.S.	N.S.	11	N.S.	70,000	Int.
#030134 (002)	6:15 am	5-22	30°	7.9	4.3	60	N.S.	N.S.	8	<0.5	70,000	Int.
#030134 (002)	3:00 pm	5-22	30°	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	<0.5	N.S.	N.S.
#030138 (001)	3:40 pm	5-21	15°	7.8	6.8	3	10	N.S.	4	N.S.	N.S.	N.S.
River Intake	4:08 pm	5-21	19°	8.2	10.0	3	19	N.S.	6	N.S.	4,300	60
River Intake	6:35 am	5-22	18°	8.4	5.6	2	16	N.S.	<2	N.S.	9,100	50

N.S. - Not Sampled
Int. - Interference

MEN01480

Table 4 Quantitative analyses of grab composite samples collected from the outfalls and river intake at Menasha Corporation to determine the concentration of select hydrocarbons present in the samples.

Outfall	#030134 (002)	#030053 (to 003)	#030055 (004)	River Intake
From	5-20-74	5-20-74	5-20-74	5-20-74
To	5-22-74	5-22-74	5-22-74	5-22-74
	ppb	ppb	ppb	ppb
Polychlorinated Biphenyls	<0.1	<0.1	<0.1	<0.1
Phthalates as DEHP	4	9	8	<1
as DBP	8	10	<1	<1

Table 5 Quantitative analyses of 24-hour grab composite samples collected by U.S.-EPA from the Menasha Corporation process and cooling discharges to the Kalamazoo River and analyzed by Michigan Water Resources Commission staff.

Outfall	Lagoon Effluent #030053 (to 003)	Ash Pond #030055 (004)	Aeration Pond #030134 (002)	Cooling Disch. #030138 (001)
From	5-20-74	5-20-74	5-20-74	5-20-74
To	5-21-74	5-21-74	5-21-74	5-21-74
pH	8.0	8.9	7.6	7.6
Color	14,500	105	420	105
Turbidity (J.T.U.)	700	93	20	3
	mg/l	mg/l	mg/l	mg/l
BOD_5	600	8	70	14
COD	8500	41	250	32
Total solids	9356	820	716	552
Total volatile solids	4298	288	372	156
Total nonvolatile solids	5058	532	344	396
Suspended solids	860	215	48	15
Suspended volatile solids	800	57	38	14
Suspended nonvolatile sol.	60	158	10	1
Dissolved solids	8496	605	668	537
Dissolved volatile solids	3498	231	344	142
Dissolved nonvolatile sol.	4998	374	324	395
Settleable solids	240	105	4	N.S.
Soluble orthophosphate-P	<0.2	0.75	<0.02	<0.01
Total phosphorus-P	5.0	1.2	0.21	0.12
Nitrate nitrogen-N	1.0	1.1	0.10	1.9
Ammonia nitrogen-N	2.0	0.06	0.06	0.28
Organic nitrogen-N	5.6	1.0	0.54	0.58
Sulfates (SO_4)	1720	76	710	74
Sulfites (SO_3)	<12	<0.5	<1	<0.5
Phenols	0.20	0.06	0.27	0.27
Chromium (Cr)	0.21	0.02	<0.01	<0.01
Copper (Cu)	0.11	155	0.01	<0.01
Nickel (Ni)	<0.05	<0.05	<0.05	<0.05
Zinc (Zn)	0.55	0.04	0.03	0.01
Lead (Pb)	0.40	<0.05	<0.05	<0.05
Titanium	<1	<1	<1	<1

N.S. - Not Sampled

Table [illegible] Comparison of Monthly Operating Reports of Men[illegible] Corporation with Michigan Water Resources Com[illegible]sion survey results.

Outfall No.	Effluent Characteristic	Monthly Operating Report	MWRC Survey Results[1] Period #1	Period #2
030138 (001)	pH (SU)	7.6 - 7.8	7.8 (6.9)	N.S
"	Suspended solids (mg/l)	2-12	10 (20)	N.S.
"	BOD_5 (mg/l)	6-53	3 (9)	N.S.
"	Flow (MGD)	[0.294, 0.294, 0.294][2]	0.407	N.S.
030134 (002)	pH (SU)	[7.8, 8.0, 8.0][2]	7.7 (7.3)	7.9 (7.9)
"	Phenol (ug/l)	170 - 420	(150)	(210)
"	Settleable sol. (lbs/day)	[6, 8, 18][2]	(155)	(116)
"	Suspended sol. (lbs/day)	[77, 98, 109][2]	(302)	(222)
"	BOD_5 (lbs/day)	[371, 549, 383][2]	90	66
"	Flow (MGD)	[0.420, 0.420, 0.438][2]	0.517	0.533
030053 (003)	pH (SU)	[8.0, 8.3, 8.2][2]	8.0 (8.0)	8.1 (8.1)
"	Total phosphorus (mg/l)	2.0 - 2.2	(5.2)	(3.6)
"	Phenol (ug/l)	70 - 720	(180)	(180)
"	Settleable solids (mg/l)	[10, 0, 10][2]	602 (60)	60 (15)
"	Suspended solids (lbs/day)	[1635, 2307, 3498][2]	(5070)	(897)
"	BOD_5 (lbs/day)	[4568, 5117, 6824][2]	(4330)	(7800)
"	Flow (MGD)	[0.727, 0.715, 0.875][2]	0.741	0.935
030055 (004)	pH (SU)	[9.0, 9.1, 9.2][2]	9.2 (8.5)	9.2 (9.2)
"	Temperature (°F)	[78, 88, 80][2]	90	81
"	Suspended solids (lbs/day)	[107, 47, 124][2]	(105)	(196)
"	Flow (MGD)	[0.078, 0.078, 0.078][2]	0.100	0.109

[1] Result of grab sample analysis; result of composite sample analysis in ( ).

[2] Reported results for May 20, 21 and 22 respectively.

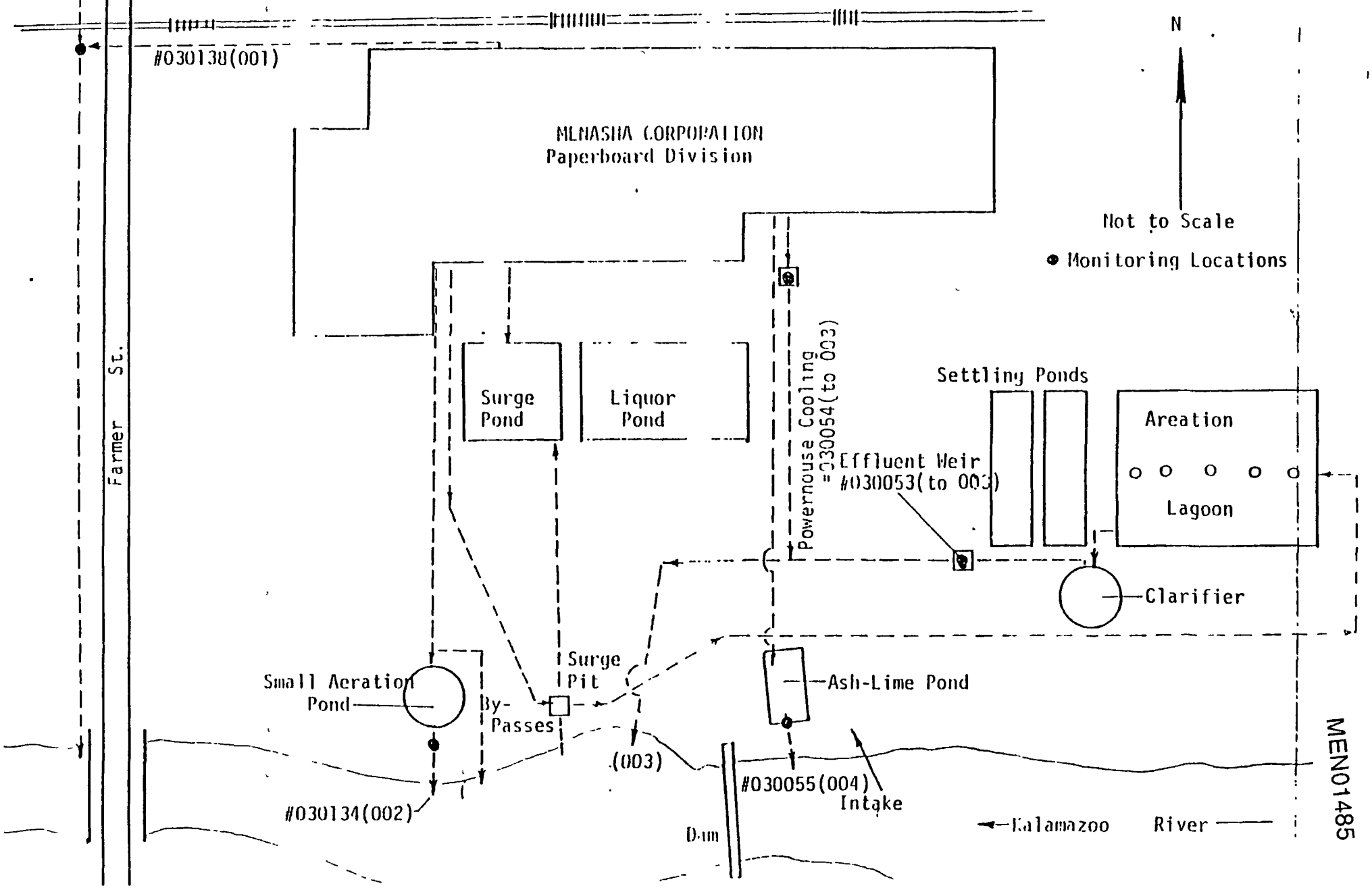
N.S. - Not Sampled

MEN01483

Survey by:	Richard Christensen, Sanitary Engineer Bradley Brogren, Sanitary Engineer William Long, Water Quality Investigator Sidney Beckwith, Water Quality Investigator Richard Irvin, General Foreman
Contact with Management:	Norman Johstone (Certified) Art Brindley (Certified)
Chlorinated Hydrocarbon Analyses by:	George Su, Chemist
Physical & Chemical Analyses by:	James Bedford, Chemist
Bacteriological Analyses by:	Michigan Department of Public Health Bureau of Laboratories
Report by:	Bradley Brogren Water Quality Appraisal Section Michigan Water Resources Commission Bureau of Water Management Environmental Protection Branch Department of Natural Resources

MM
Distribution "A"

Menasha Corporation
Outfalls May 74



MEN01485

Michigan Department of Natural Resources (MDNR) - Environmental Protection Bureau (EPB), "Report of an Industrial Survey Conducted at Menasha Corporation, September 18-19, 1978".

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
NT SOURCE STUDIES SECTION

Report of an
ustrial Wastewater Survey
Conducted at
ENASHA CORPORATION
All Outfalls No. 030019
Allegan County
Otsego, Michigan
September 18-19, 1978

ng was performed during one twenty-four hour survey
eptember 18, 1978.

survey met the final limitations in the facility's
rge Elimination System (NPDES) Permit, No. MI0003824

ompared to the company's September 1978 Monthly
Suspended solids and settleable solids were found
han those reported by the company at outfall 030171

s were split with the company for comparison of
company reported significantly lower concentrations
leable solids, and phenol than did the Environmental
tory for outfall 030171 (003) (Table 4).

survey were compared to the previous survey conducted
re higher for each outfall during this survey. At
entrations of BOD_5, COD, and phenol decreased since
all 030171 (003) concentrations of phenol decreased
ince the last survey (Table 5).

ater was not flowing during the survey.

tfall 030171 (003) contained 100 and 120 mg/l concen-
able oil and grease.

el in the grab sample from outfall 030171 (003) was
ppears there is insufficient aeration in the treatment
been previously documented.

(100 mg/l 120 mg/l)

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated medium through a non-sulfur pulping process. The mill operates 24 hours a day, 7 days per week, employing about 240 people. Production was considered to be about 90-95% of normal during the survey.

The paper pulp used in the plant is derived from hardwood chips (65%) and recycled waste cardboard (35%). The hardwood chips are digested in a cooking liquor containing sodium carbonate and sodium hydroxide, pulped and refined. The pulp is conveyed through mechanical presses which remove 60% of the cooking liquor. The waste recycled cardboard is hydropulped and mixed with wood chip pulp in a mixing chest. The pulp is then pumped to the two Fourdrinier paper machines.

The spent liquor is either sent to a 500,000 gallon liquor storage pond or a separate storage tank. Excess liquor is either given away to the county for use as a roadbinder or concentrated in evaporators and incinerated in a fluid bed reactor to form a salt cake. The salt cake is reused by the plant.

Water Supply, Wastewater & Treatment

Menasha Corporation obtains process water and a portion of its cooling water from either company wells or the City of Otsego. Powerhouse cooling water is pumped from the Kalamazoo River and the plant's domestic supply is obtained from the city. The company uses an organosulfur biocide to inhibit bacteria growth at the well heads. The water used in the boilers is provided further treatment.

The plant has five outfalls to the Kalamazoo River (Figure 1). Outfall 030138 (001) discharges cooling water from the primary refiners, air compressors, drive magnetic clutch and #1 machine oil cooler plus roof drainage. Outfall 030134 (002) discharges the winder, the digester cooling waters and the contaminants seal water off the #1 machine. The wastewater is treated in a small aeration pond before being discharged.

Condenser cooling water from the powerhouse flows into a monitoring sump. Part of this flow combines with the treated process flows, outfall 030171, and is discharged from outfall 003 to the Kalamazoo River. The rest of the condenser cooling water is discharged to an unpermitted outfall upstream of the dam.

Water softener backwash, some cooling waters and miscellaneous floor and roof drainage discharges through the old ash-lime pond, outfall 030055 (004) to the river. Fly and bottom ash from the powerhouse goes to the ash-lime settling ponds and then to the treatment system.

The white water from the savealls is discharged to the treatment system. The treatment system consists of an aeration lagoon, clarifier and settling ponds. The effluent from the treatment system, outfall 030171 is mixed with cooling water before being discharged through outfall 003.

Clarifier sludge presently applied subsurface to approved farm sites and bake site.

Spent liquor currently held in 1 storage pond south of 106th Ave. (see attached diagram)

Grease sludge stored in pits across 106th St from plant (see attached diagram)

RECEIVED
DEC 2 1978
DISTRICT 3
WATER QUALITY DIV.

DEC 18 1978

MEN01487

RESOURCES
BUREAU
SECTION

Survey

TION
30019

177

during one twenty-four hour survey

the final limitations in the
System (NPDES) Permit,
was exceeded for outfalls
3.6 mg/l. A total phosphorus
), which exceeds the daily

the plant in the monthly operating
found during the survey (Table

the survey were split with the plant
Bureau's Laboratory results agreed
for phenol concentrations. The
Bureau's laboratory results (Table 4).

against the results of the
the flow at outfall 001 was
at outfall 002 were higher;
wastewater was lower, while
flow at outfall 004 was higher,
were lower (Table 5).

the quality and quantity of
ation, to the Kalamazoo River
Permit No. MI0003824.

Objective 1 #5 former neutral sulfite process

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated cardboard medium through the neutral sulfite pulping process. The mill operates 24 hours a day, 7 days per week, employing 240 people. Normal production is 360-370 tons per day.

The process begins with hardwood chips that are brought to the plant. The chips are digested with a sulfite cooking liquor consisting of sodium sulfite, soda ash and on rare occasions sodium hydroxide for a buffer. The chips are further broken down through refiners. The pulp is conveyed through mechanical presses which removes 60% of the cooking liquor.

The spent liquor is either sent to a 500,000 gallon liquor storage pond or a separate storage tank. Excess liquor is either given away to the county for use as a roadbinder or concentrated in evaporators and incinerated in a fluid bed reactor to form a sodium sulfite salt cake. The salt cake is sold to Kraft mills for use in their process.

After the presses the pulp enters the stock bin and is sent through primary refiners to the wood chest. At the wood chest the pulp is blended with recycled scrap paper and broke from the paper machines. The stock is further refined before going through the inlet fan pump to the head box and the two Fourdrinier paper machines.

Water Supply, Wastewater & Treatment

Menasha Corporation obtains process and a portion of the cooling water from either wells or the City of Otsego. Powerhouse cooling water is pumped from the Kalamazoo River and the plant's domestic supply is obtained from the city. The company uses an acrylonitrite conditioner at the well heads for calcium and iron treatment. An organosulfur biocide is also added to inhibit bacteria growth. The water used in the boilers is further treated.

The plant has five outfalls to the Kalamazoo River (Figure 1). Outfall 030138 (001) discharges cooling water from the primary refiners, air compressors, drive magnetic clutch and #1 machine oil cooler plus roof drainage. Outfall 040134 (002) discharges the winder, the digester cooling waters and the contaminants seal water off the #1 machine. The wastewater is treated in a small aeration pond before being discharged.

Part of the condenser cooling water from the powerhouse, outfall 030053, combines with the treated process outfall 030171 and is discharged from outfall 003 to the Kalamazoo River. The rest of the cooling water is discharged through an unpermitted outfall behind the dam.

Water softener backwash, some cooling waters and miscellaneous floor and roof drainage discharges through the old ash-lime pond, outfall 030055 (004) to the river. Fly and bottom ash from the powerhouse goes to the new ash-lime settling ponds and then to the treatment system.

MEN01488

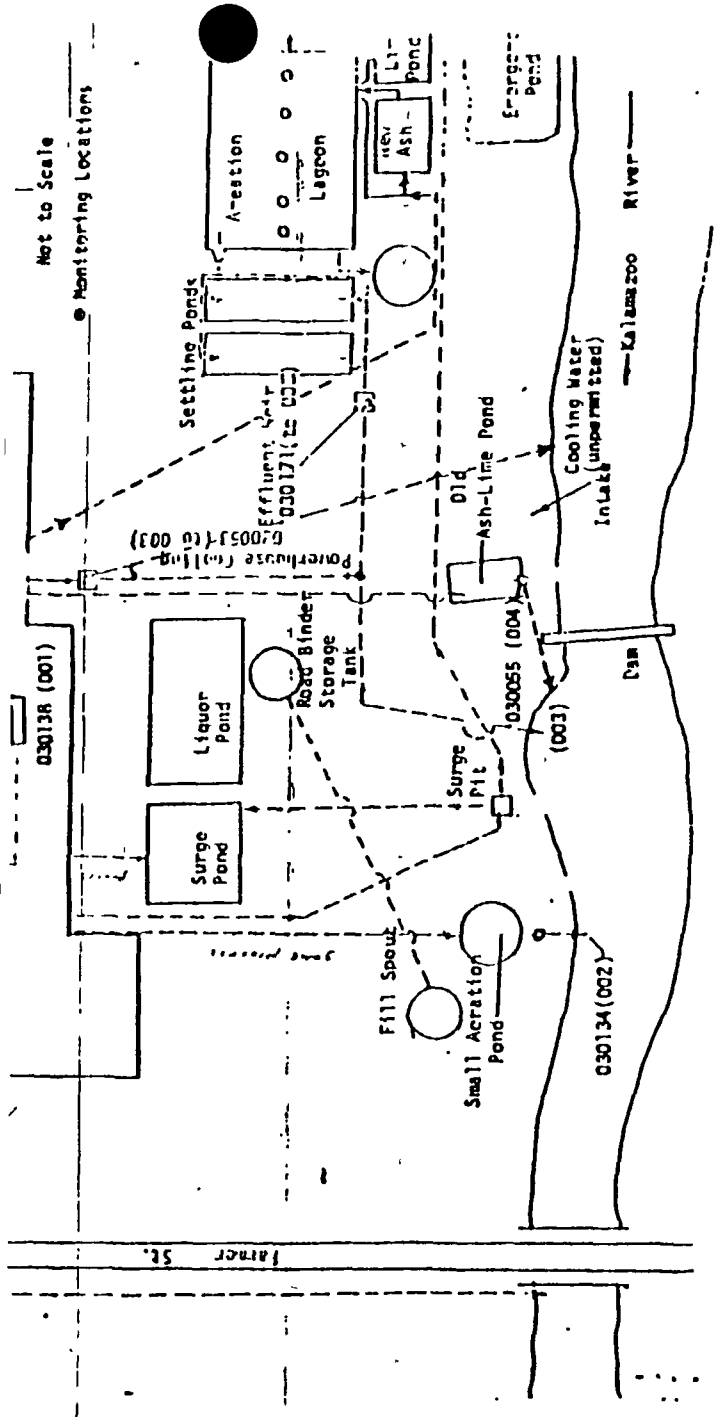
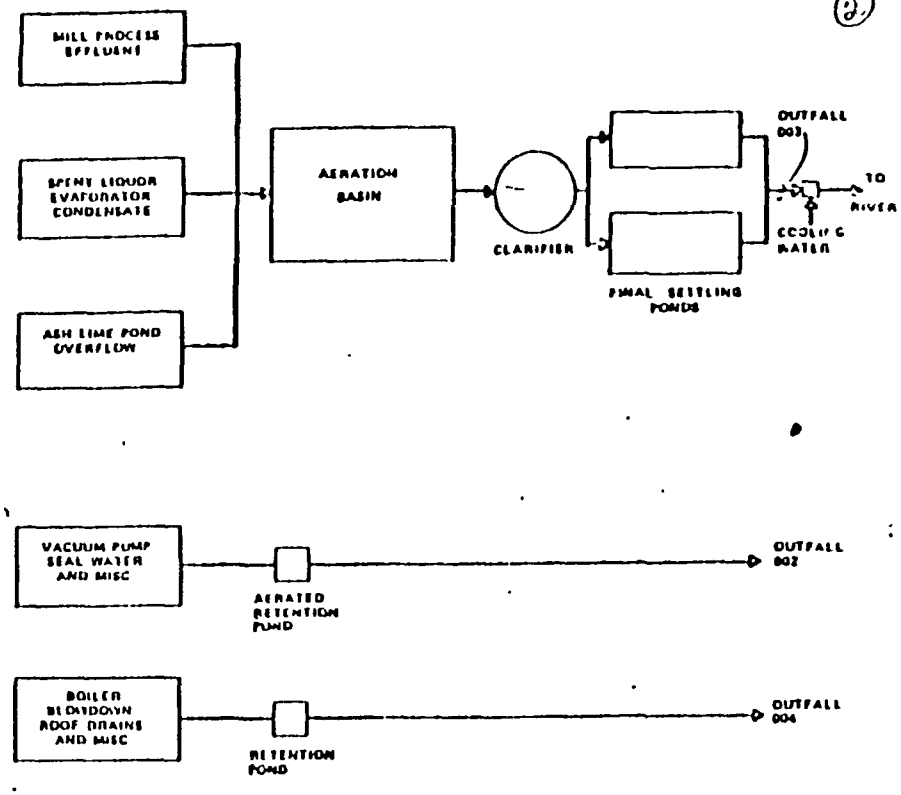


Figure 2 Menasha Corporation - Otsego



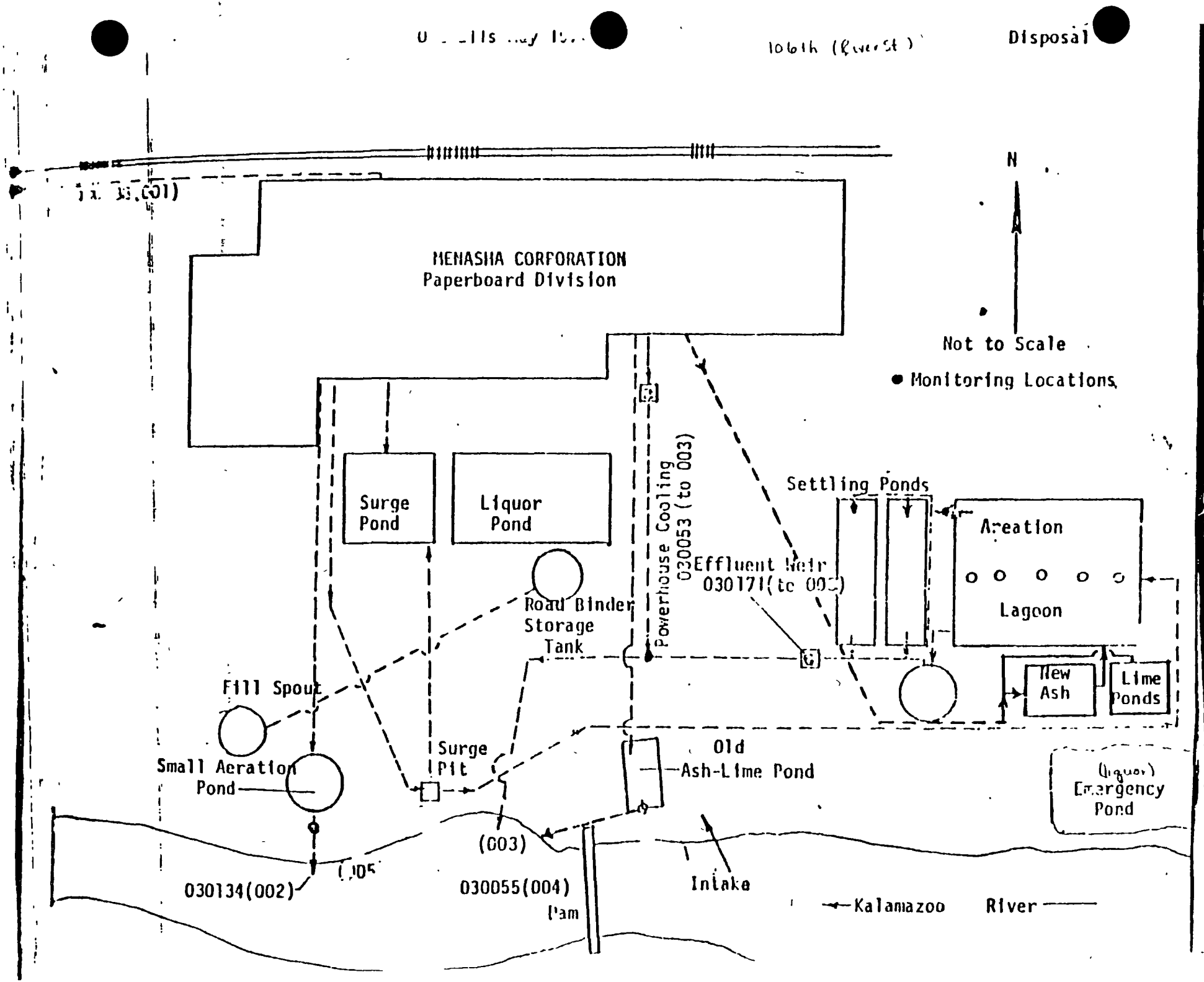
- OUTFAL 001 IS STORM DRAIN
- OUTFALL 003 IS COMPUTED COMBINATION OF 003 PLUS 002

MENASHA CORPORATION
OTSEGO MILL

DISCHARGE OUTFALL NOMENCLATURE

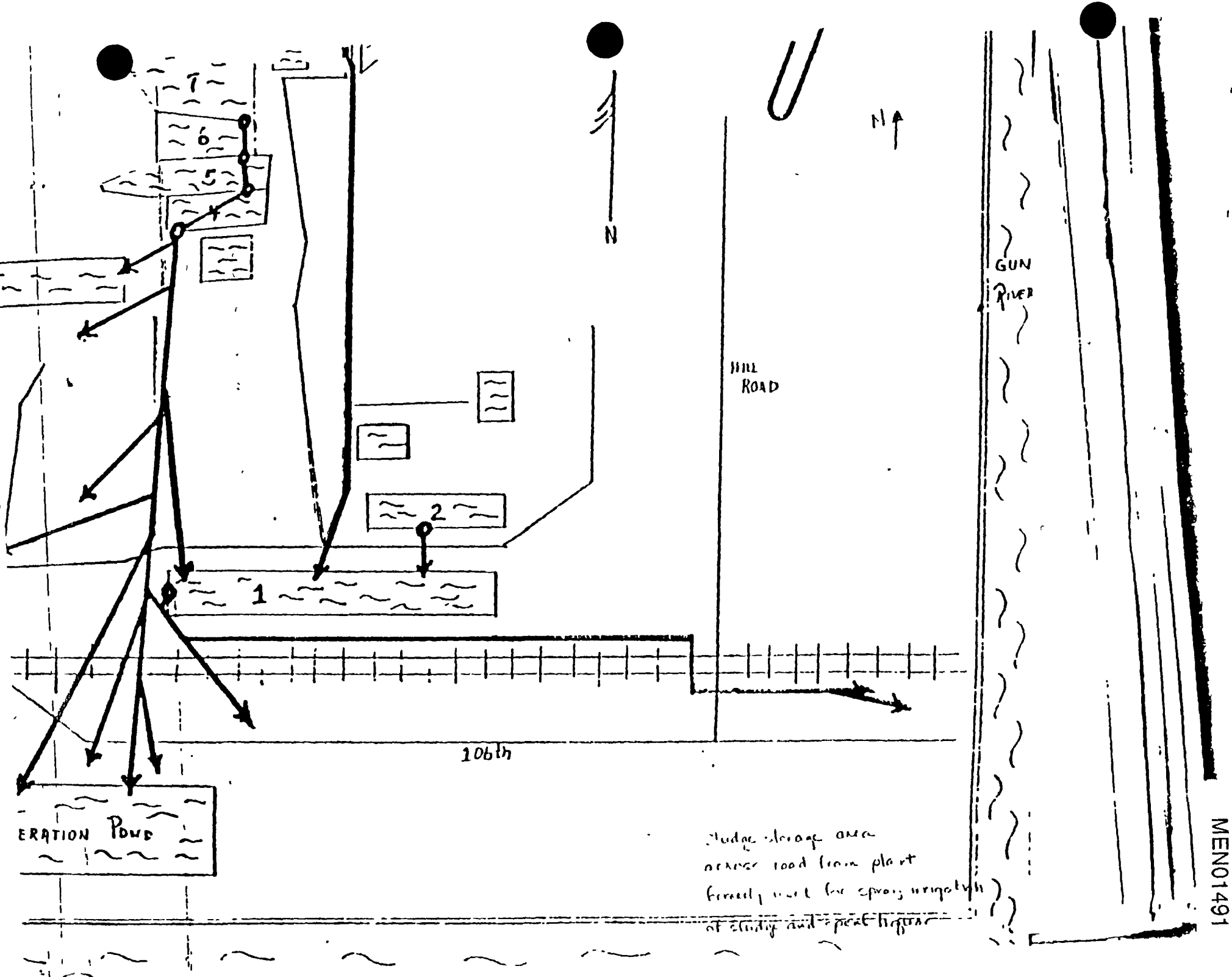
L11087 AQ

MEN01489



Disposal
106th (River St)
N
Not to Scale
Monitoring Locations
MENASHA CORPORATION
Paperboard Division
Surge Pond
Liquor Pond
Powerhouse Cooling
030053 (to 003)
Settling Ponds
Areation
Lagoon
Effluent Weir
030171(to 003)
Road Binder Storage Tank
New Ash
Lime Ponds
Fill Spout
Small Aeration Pond
Surge Pit
Old Ash-Lime Pond
(Liquor) Emergency Pond
(003)
030134(002)
030055(004)
Dam
Intake
Kalamazoo River

MEN01490


7
6
5
4
N
N
GUN
RIVER
HILL
ROAD
2
1
106th
ERATION POND
Sludge storage area
access road from plant
formerly used for spray irrigation
of sludge and peat liquor

MEN01491

MEN01492

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
JACOB A HOEFER
ARL T JOHNSON
M LAITALA
ILARY F SNELL
HARRY H WHITELEY
JOAN L WOLFE
CHARLES G YOUNGLOVE

WILLIAM G MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A TANNER Director

State Office Building
350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

January 7, 1980

Mr. John Blauwkamp
Menasha Corporation
320 N. Farmer Street
Otsego, Michigan 49078

Dear Mr. Blauwkamp:

Enclosed are two copies of the "Report of An Industrial Wastewater Survey" conducted at Menasha Corporation, Otsego Mill, on September 10-11, 1979. The report includes the volume of wastewater discharged and the results of the chemical analyses performed on the composites samples collected of the effluents. In addition, grab samples were obtained for selected parameters.

The results of this survey indicate Menasha's discharges to the Kalamazoo River met the final effluent limitations contained in their N.P.D.E.S. Permit No. MI 0003824 during the survey period for most parameters. The daily average limit for phenol was exceeded at Outfall 002 both in the composite and grab samples.

In comparing the results of the split composite sample from Outfall 000, the survey results were higher than Menasha's for suspended solids, settleable solids, and phenol. In contrast, Menasha's soluble ortho phosphorus-P result was greater than that of the survey.

The company's results, as reported on the monthly operating reports, were less than the survey results for BOD_5 at Outfall 002 as well as those parameters mentioned above at Outfall 000.

The last survey was conducted at this facility in September, 1978. Flow reductions of about 50% were noted at both Outfall 000 and Outfall 002. This indicates an effort on the part of the company to reduce the amount of water being discharged. Outfall 000 showed an increase in both ammonia-nitrogen and potassium. Outfall 004 results indicate an increase in BOD and suspended solids but a decrease in COD and dissolved solids.

In addition, a 48-hour static in-lab invertebrate toxicity test was performed on a composite sample from Outfall 000. That report is included in the survey report. As you know, samples were collected on December 17, 1979 so that the static toxicity test could be repeated using lower effluent concentrations of Outfall 000 effluent and also a test using combined process/cooling wastes. The results of this repeat test will be forwarded when available.

MICHIGAN
THE GREAT LAKE STATE
R1026-1 1/79

A reminder that we should meet regarding your sludge disposal program for farmland prior to the beginning of the soil injection season. Approval is necessary for each site to be considered for land application.

Your review and comments regarding the contents of this survey report should be submitted by February 15, 1980. We are anticipating receipt of your Coordinated Environmental Policy by January 30, 1980.

Sincerely,

WATER QUALITY DIVISION

Marge Spruit

Marge Spruit,
Water Quality Specialist

MS/mc

Enclosures

cc: J. Bohunsky

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

Report of an
Industrial Wastewater Survey
Conducted at
MENASHA CORPORATION
All Outfalls No. 030019
Allegan County
Otsego, Michigan
September 10-11, 1979

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, September 10, 1979.

The results of this survey are compared to the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0003824. Based on that comparison, the daily maximum phenol concentration was exceeded at outfall 030134 (002) (Table 3).

The survey results compare well with the self-monitoring results reported the survey dates in the company's Monthly Operating Report, except for [illegible] concentration on outfall 002 and suspended solids concentration on outfall 030171 000. Survey concentrations are higher than the company reported concentrations in both cases (Table 3).

The composite samples collected were split with the company for comparison of laboratory results. The company's results compare well with the Environmental Protection Bureau Laboratory results, except for suspended solids, settleable solids and phenol concentrations on outfall 000. The company's concentrations are lower on all three parameters (Table 4).

The last survey performed at this facility was in September 1978. The discharge concentrations are similar from each survey, but flow reductions of about 50% at outfalls 030171 (000) and 030134 (002) were noted this survey (Table 5).

Composite sample results of the influent to the wastewater treatment process are included in Table 1.

Survey Comments

Outfall 001 did not discharge during the survey because the cooling water is now being routed to the vacuum seal pumps. A discharge will occur from this outfall only during start-up of the paper machine.

A 48-hour static, in-lab, invertebrate toxicity test was performed on a composite sample collected from outfall 030171. The LC50 concentration was 9.6 percent effluent (Appendix A).

The aerator in the small aeration pond which treats the wastewater discharged through outfall 002 was not in operation during the survey.

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated medium through a non-sulfur pulping process. The mill operates 24 hours a day, 7 days per week, employing about 240 people. Production was considered to be about 90% normal during the survey at 330 tons/day.

The paper pulp used in the plant is derived from hardwood chips (65%) and recycled waste cardboard (35%). The hardwood chips are digested in a cooking liquor containing sodium carbonate and sodium hydroxide, pulped and refined. The pulp is conveyed through mechanical presses which remove 60% of the cooking liquor. The waste recycled cardboard is hydropulped and mixed with wood chip pulp in a mixing chest. The pulp is then pumped to the two Fourdrinier paper machines.

The spent liquor is sent to a 500,000 gallon liquor storage pond. Excess liquor is either given away to the county for use as a roadbinder or concentrated in evaporators and incinerated in a fluid bed reactor to form a salt cake. The salt cake is reused by the plant.

Water Supply, Wastewater & Treatment

Menasha Corporation obtains process water and a portion of its cooling water from either company wells or the City of Otsego. Powerhouse cooling water is pumped from the Kalamazoo River and the plant's domestic supply is obtained from the city. The company uses an organosulfur biocide to inhibit bacteria growth at the well heads. The water used in the boilers is provided further treatment.

The plant has five outfalls to the Kalamazoo River (Figure 1). Outfall 030138 (001) discharges cooling water from the primary refiners, air compressors, drive magnetic clutch and #1 machine oil cooler. Outfall 030134 (002) discharges the winder, the digester cooling waters and contaminants seal water off the #1 machine. The wastewater is treated in a small aeration pond before being discharged.

Condenser cooling water from the powerhouse flows into a monitoring sump, outfall 030053 (003). Part of this flow combines with the treated process flows, outfall 030171, and is discharged to the Kalamazoo River just below the company dam. The rest of the condenser cooling water is discharged upstream of the dam.

Cooling water and miscellaneous floor and roof drainage discharges through the old ash-lime pond, outfall 030055 (004) to the river. Water softener backwash and fly and bottom ash from the powerhouse goes to the ash-lime settling ponds and then to the treatment system.

The white water from the savealls is discharged to the treatment system. The treatment system consists of ammonia addition prior to an aeration lagoon, clarifier and settling ponds. The effluent from the treatment system, outfall 030171 is mixed with cooling water before being discharged.

MEN01

es were obtained as follows:

Flow Measurement	Sampling
's 24" full channel weir & water level recorder.	Automatic air activated sampler & individual grab samples.
--	Grab composite & individual grab samples.
ny's 60° v-notch weir & staff r level recorder.	Automatic air activated sampler & individual grab samples.
any's 24" rectangular weir & ff water level recorder.	Automatic scoop type sampler & individual grab samples.
any flow reading.	Split of company sample.
--	Individual grab sample.

recorder provides a continuous account of the liquid level or st a weir. A head versus time graph is obtained for the r eriod. The total volume of wastewater over the weir during is computed from the graph.

sampler composites samples at timed intervals. Samples may be he instantaneous flow over the weir or through the flume.

osite consists of a series of individual grabs composited into one

ual grab is a single instantaneous sample.

re analyzed by the Environmental Protection Bureau Laboratories ing.

re preserved according to Table 6. The results of the physical alyses are presented in Tables 1 & 2.

MEN014

Menasha Corporation - Otsego

ıalyses of composite samples.

		030171 (000)	030134 (002)
·iod	From	9-10-79 - 1400	9-10-79 - 1130
	To	9-11-79 - 1400	9-11-79 - 1130

flow rate* (M^3/day)	1,420	1,110
·low rate (M^3/day)	1,570 - 9-10-79 @ 2228	1,330 - 9-10-79 @ 1718
low rate (M^3/day)	1,130 - 9-11-79 @ 1228	370 - 9-10-79 @ 2109

	mg/l	kg/day	mg/l	kg/day
)D	100	140	21	23
	3,000	4,300	99	110
ied solids	260	370	10	11
ved solids	5,300	7,500	520	580
able solids	50	71	< 10	--
:e & nitrate nitrogen-N	0.33	0.47	0.36	0.40
ia [illegible]trogen-N	1.34	1.9	0.021	0.02
ic [illegible]rogen-N	27	38	1.3	1.4
phosphorus-P	1.9	2.7	0.13	0.14
)phosphates-P	< 0.10	--	0.026	0.03
esium (Mg)	18	26	--	--
ssium (K)	62	88	--	--
ıols	0.185	0.26	0.36	0.40
al copper (Cu)	0.09	0.13	--	--
al lead (Pb)	0.19	0.27	--	--
al zinc (Zn)	0.24	0.34	--	--
al manganese (Mn)	0.34	0.48	--	--
al vanadium (V)	< 0.25	--	--	--
al cobalt (Co)	< 0.25	--	--	--
al molybdenum (Mo)	< 0.25	--	--	--

low rates used in the computation of kg/day.
ɔ obtain MGD multiply M^3/day by 0.0002642
ɔ obtain lbs/day multiply kg/day by 2.205

Menasha Corporation - Otsego

Table 1 Analyses of composite samples.

Outfalls		030053 (003)		030055 (004)	
Survey Period	From	9-10-79 - 1415		9-10-79 - 1205	
	To	9-11-79 - 1415		9-11-79 - 1205	
Computed flow rate* (M^3/day)		(27,500)		323	
Highest flow rate (M^3/day)		--		387 - 9-10-79 @ 2026	
Lowest flow rate (M^3/day)		--		293 - 9-10-79 @ 1701	
		mg/l	kg/day	mg/l	kg/day
5-day BOD		13	360	32	10
COD		38	1,050	37	12
Suspended solids		42	1,200	13	4.2
Dissolved solids		380	10,000	560	180
Nitrite & nitrate nitrogen-N		0.67	18	0.26	0.08
Ammonia nitrogen-N		0.35	9.6	0.21	0.07
Organic nitrogen-N		1.8	50	0.79	0.26
Total phosphorus-P		0.29	8	0.12	0.04

Outfall		Influent	
Survey Period	From	9-10-79 - 1000	
	To	9-11-79 - 1000	
Computed flow rate* (M^3/day)		(1,740)	
		mg/l	kg/day
5-day BOD		3,100	5,400
COD		9,100	16,000
Suspended solids		620	1,100
Dissolved solids		8,200	14,000
Settleable solids		230	400
Nitrite & nitrate nitrogen-N		0.59	1
Ammonia nitrogen-N		1.58	2.75
Organic nitrogen-N		40	70
Total phosphorus-P		6	10
Phenols		12	21

* Flow rates used in the computation of kg/day (obtained by Company).
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Menasha Corporation - Otsego

Table 2 Analyses of grab samples.

Date	Time	Temp.[1] °C	pH[1] S.U.	Oil & Grease mg/l	BOD mg/l	COD mg/l	Susp. solids mg/l	Settle. solids mg/l	Phenol mg/l	Ortho-phosphates mg/l	Diss. solids mg/l
030171 (000)											
9-10-79	2110	19.0	8.3	--	93	--	280	100	0.28	< 0.1	--
9-11-79	0830	18.5	8.3	--	91	--	240	50	0.24	< 0.1	--
030134 (002)											
9-10-79	2010	32.0	7.4	16	23	--	13	< 13	0.33	--	--
9-11-79	0745	31.5	7.7	6	20	--	6	< 6	--	--	--
030053 (003)											
9-10-79	2050	28.0	7.6	< 1	--	41	--	--	--	--	--
9-11-79	0815	23.0	7.2	< 1	--	41	--	--	--	--	--
030055 (004)											
9-10-79	2035	17.5	7.5	< 1	--	41	12	--	--	--	--
9-11-79	0805	15.0	7.3	< 1	--	40	7	--	--	--	--
River Intake											
9-11-79	0850	15.0	7.4	--	--	54	--	--	--	--	390

1 - Values determined in the field at time of sampling.

MEN01499

Table 3 Comparison of survey results with the facility's N[illegible] Permit and Monthly Operating

Parameter (Unit)	NPDES Permit Final Limitations		September Monthly Operating Report				Survey [illegible]lts[1]
	Average	Maximum	Monthly Average	Monthly Maximum	9-10-79	9-11-79	
030171 (000)							
Flow (M^3/day)	--	--	2,090	3,030	1,530	1,420	1,420
BOD_5 (mg/l)	--	--	119	162	105	102	100 (93, 91)
Suspended solids (mg/l)	--	--	210	340	193	132	260 (280, 240)
Settleable solids (mg/l)	--	--	23	158	40	0	50 (100, 50)
Phenol (mg/l)	--	0.30	0.07	0.11	--	0.086	0.185 (0.28, 0.24)
Soluble orthophosphorus-P (mg/l)	--	1.0	0.78	1.15	0.53	--	< 0.10 (<0.1, <0.1)
(kg/day)	--	2.6	1.5	2	0.82	--	--
pH (S.U.)	not <6.0 nor >9.0		8.6	8.7	8.7	8.6	(8.3, 8.3)
				min. 8.5			
030134 (002)							
Flow (M^3/day)	--	--	1,180	1,700	1,070	969	1,110
BOD_5 (mg/l)	--	--	7	22	0	6	21 (23, 20)
Susp. solids (mg/l)	--	--	4	12	8	3	10 (13, 6)
Phenol (mg/l)	--	0.30	0.21	0.38	--	0.38	0.36 (0.33)
pH (S.U.)	not <6.0 nor >9.0		8.0	8.3	7.9	8.0	(7.4, 7.7)
				min. 7.6			
030053 (003)							
Flow (M^3/day)	--	--	--	--	26,700	28,300	27,500
Temperature (°C)	--	--	22.2	23.3	--	--	(28.0, 23.0)
pH (S.U.)	not <6.0 nor >9.0		7.8	7.9	--	--	(7.6, 7.2)
				min. 7.6			
030055 (004)							
Flow (M^3/day)	--	--	344	1,020	295	295	323
Susp. solids (mg/l)	--	--	9	50	7	2	13 (12, 7)
(kg/day)	--	--	3.2	16	2.3	0.50	4.2
Temperature (°C)	--	--	18.9	23.9	18.9	18.9	(17.5, 15.0)
pH (S.U.)	not <6.0 nor >9.0		--	--	--	--	(7.5, 7.3)
030186 (combined 000 & 002)							
BOD_5 [2] (kg/day)	--	1,695	256	425	161	151	160
Suspended solids (kg/day)	--	1,455	454	860	304	191	380

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
2 - Effluent limitations from June 1 - October 31.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

MEN0150

Table 4 Comparison of the laboratory analytical results obtained by Menasha Corporation, Otsego and the Environmental Protection Bureau from the split composite samples.

Outfall	030171 (000)		030134 (002)	
	Menasha	E.P.B.	Menasha	E.P.B.
*Flow (M^3/day)	1,530	1,420	1,070	1,110
	mg/l	mg/l	mg/l	mg/l
5-day BOD	90	100	23	21
Suspended solids	163	260	8	10
Settleable solids	5	50	3	< 10
Total phosphorus-P	1.12	1.9	--	--
Orthophosphates-P	0.53	< 0.10	--	--
Phenol	0.086	0.185	0.38	0.36

Outfall	030055 (004)	
	Menasha	E.P.B.
*Flow (M^3/day)	295	323
	mg/l	mg/l
Suspended solids	12	13

* Flow obtained from company totalizer.

MEN01502

Menasha Corporation - Otsego

le 5 Comparison of the previous survey results with the results obtained in this survey.

tfall		030171 (000)		030134 (002)	
rvey Date	From	9-18-78	9-10-79	9-18-78	9-10-79
	To	9-19-78	9-11-79	9-19-78	9-11-79
ow Rate (M^3/day)		2,700	1,420	2,000	1,110
		mg/l	mg/l	mg/l	mg/l
-day BOD		76	100	20	21
OD		2,700	3,000	87	99
uspended solids		330	260	12	10
)issolved solids		5,200	5,300	510	520
ettleable solids		100	50	< 12	< 10
Nitrite & nitrate nitrogen-N		0.49	0.33	0.04	0.36
Ammonia nitrogen-N		0.89	1.34	0.03	0.021
Organic nitrogen-N		27	27	1.1	1.3
[illegible] phosphorus-P		1.9	1.9	0.17	0.13
Orthophosphates-P		--	--	0.01	0.026
Magnesium (Mg)		20	18	--	--
Phenols		0.15	0.185	0.32	0.36
Potassium (K)		42	62	--	--
Total copper (Cu)		0.08	0.09	--	--
Total zinc (Zn)		0.21	0.24	--	--

Outfall		030055 (004)	
Survey Date	From	9-18-78	9-10-79
	To	9-19-78	9-11-79
Flow Rate (M^3/day)		420	323
		mg/l	mg/l
5-day BOD		3.6	13
COD		65	38
Suspended solids		27	42
Dissolved solids		810	380

MEN015

6 Sample Preservation

eter	Preservative
	10 drops conc. H_2SO_4/250 ml (to pH <2).
ide & Phenolics	Dechlorinate with ascorbic acid (if needed). 10 drops 10 N NaOH (to pH 12)/250 ml.
al Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
l & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2).

l samples cooled to 4°C and preserved upon collection and chain of custody maintained.

Survey by: Gary Boersen, Sanitary Engineer
L.J. McDonald, Water Quality Investigator
Joseph Hey, Water Quality Technician

Contact with Managemen: Art Brindley, Wastewater Treatment Technician & Certified Operator

Physical & Chemical Analyses by: Environmental Protection Bureau Laboratory

Report by: Gary Boersen
Joseph Hey
Point Source Studies Section
Environmental Services Division
Environmental Protection Bureau
Michigan Dept. of Natural Resources

Distribution "A"
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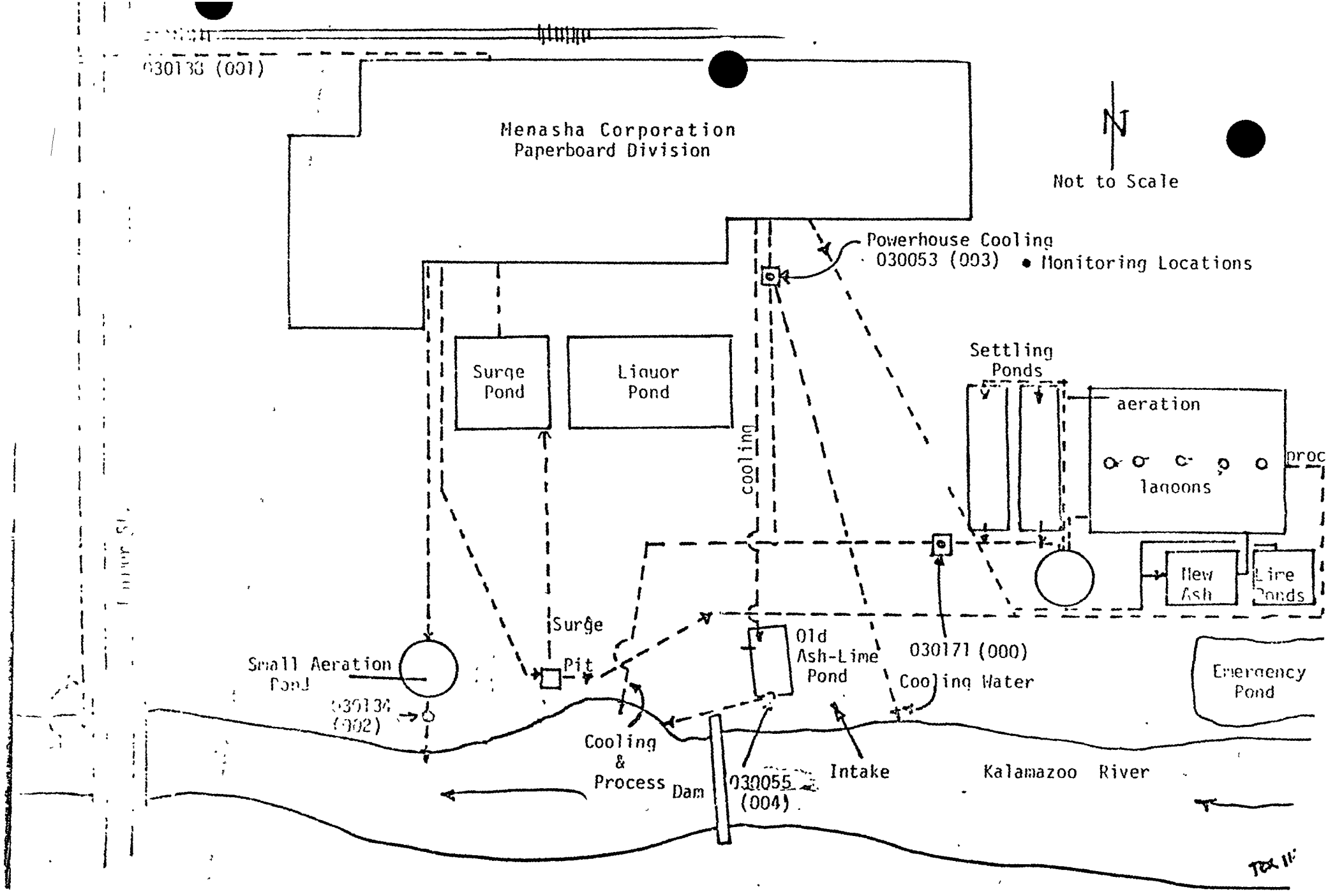
030136 (001)
Menasha Corporation
Paperboard Division
N
Not to Scale
Powerhouse Cooling
030053 (003)
• Monitoring Locations
Surge
Pond
Liquor
Pond
cooling
Settling
Ponds
aeration
lagoons
proc
New
Ash
Lime
Ponds
Surge
Pit
Small Aeration
Pond
030136
(002)
Old
Ash-Lime
Pond
030171 (000)
Cooling Water
Emergency
Pond
Cooling
&
Process
Dam
030055
(004)
Intake
Kalamazoo River

MEN01

Appendix A

Report of a Toxicity Screening Test Conducted
on Wastewaters Discharged by
MENASHA CORPORATION
September 12-14, 1979

Summary

During September 12-14, 1979, a static toxicity screening test was conducted on a sample of Menasha Corporation process effluent, outfall 030171 (000). The sample was collected prior to mix with cooling water and discharge to the Kalamazoo River. The macroinvertebrate Daphnia magna was used as the test species during the toxicity evaluation.

The effluent sample from outfall 030171 (000) was toxic to daphnids on an acute (short term) basis. The 48-hour LC50 (effluent concentration lethal to 50 percent of the test organisms) was estimated at 9.6 percent effluent with 95 percent confidence limits of 5.5 and 14 percent effluent. The observed mortalities were probably due to the combination of heavy metals, phenolics and ammonia found in the sample. The toxicity of various components may have been enhanced by the reduced dissolved oxygen levels resulting from the effluent BOD.

Further testing is suggested at Menasha Corporation using lower effluent concentrations at 030171 (000) and combined process/cooling wastes as discharged to the Kalamazoo River.

Test Procedures

On September 10-11, 1979, Environmental Protection Bureau personnel collected a 24-hour composite sample of treated process effluent from outfall 030171 (000) at Menasha Corporation, Otsego. The effluent was sampled prior to mix with cooling water and discharge to the Kalamazoo River. The sample was transported at ambient temperature to the Lansing laboratory for toxicity testing.

A 48-hour static toxicity test using Daphnia magna (<48 hours old) was conducted according to procedures outlined in the U.S.-EPA publication, Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians. The following nominal concentrations were prepared using aged, dechlorinated, activated carbon filtered Lansing city water as the diluent: 100, 75, 50, 25, 10, and 5 percent effluent. Controls were provided using 100 percent diluent. Duplicate 250 ml glass beakers containing 200 mls of the test solution were prepared for each concentration and control to provide replication. Five daphnids were randomly assigned to each beaker marking the start of the test. The test solutions were held at ambient lab temperatures.

Identical beakers containing various effluent and control test solutions, but without daphnids were set aside for analysis of selected physical/chemical parameters. Table 1 presents the results of analyses run at the beginning and end of the 48-hour test.

A toxicity screening test gives a general indication of effluent toxicity. The data generated should not be used as a definitive criterion for evaluating effluent impact on receiving waters.

Results and Discussion

Menasha Corporation process effluent [outfall 030171 (000)] sampled prior to mixing with cooling water, was toxic to D. magna on an acute (short-term) basis (Table 2). The 48-hour LC50 was estimated at 9.6 percent effluent with 95 percent confidence limits of 5.5 and 14 percent effluent. Many of the survivors exposed to the effluent solutions were visibly stressed while the controls appeared unaffected.

The effluent was the color of strong coffee and had many suspended solids making it difficult to see the daphnids in test concentrations greater than 10%. The 24-hour mortality count was omitted to minimize the risk of injuring the animals while looking for them. When checked at 48 hours, one daphnid was missing from a 25% effluent container. The animal was not included in the LC50 calculations.

Several potential toxicants were measured in a preserved portion of the composite sample. Copper (0.09 mg/l), lead 0.19 mg/l), zinc (0.24 mg/l), phenolics (0.185 mg/l) and ammonia (1.34 mg/l as nitrogen-N) probably all contributed to the effluent toxicity. In addition, dissolved oxygen levels dropped markedly during the test period in the higher effluent concentrations due to the BOD of the effluent (BOD_5 = 100 mg/l). The low oxygen levels may have enhanced the effects of the other toxicants. Other toxicants may have been present but not measured in the composite sample.

Further study is suggested. At outfall 030171 (000) effluent concentrations lower than five percent should be tested to allow for better definition of an LC50. Tests using the combined process/cooling water effluent as discharged by Menasha Corporation would give a more representative indication of the waste impact on the Kalamazoo River. Flow-through testing may also be in order.

Table 1 Analyses run on control and effluent test solutions at the beginning and end of the 48-hour exposure period.

	Outfall 030171 (000)					
	9-12-79			9-14-79		
Parameter	Control	25%	100%	Control	25%	100%
Dissolved oxygen (mg/l)	7.8	7.3	6.4	7.3	4.8	1.9
Oxygen saturation (percent)	93	87	75	86	57	22
pH (S.U.)	7.5	8.3	8.4	7.5	8.7	9.0
Temperature (°C)	24	24	23	24.5	24.5	24.5
Conductivity (umhos)	600	1820	5200	600	1880	5500

Table 2 Percent mortality in each test concentration after 48 hours exposure to Menasha process effluent.

Percent Effluent	48-hour Percent Mortality
100	100
75	100
50	100
25	67
10	40
5	40
0 (control)	0

Samples Collected By: Joseph Hey, Water Quality Technician
James McDonald, Water Quality Investigator

Survey Engineer: Gary Boersen, Environmental Engineer

Toxicity Evaluation & Report By: Bonnie L. White, Aquatic Biologist
Point Source St dies Section
Environmental Services Division
Environmental Protection Bureau
Michigan Dept. of Natural Resources

NATURAL RESOURCES COMMISSION
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STATE OF MICHIGAN

WILLIAM G MILLIKEN Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A TANNER Director

State Office Building
350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

GER

MEN01508

January 25, 1980

Mr. John Blauwkamp
Menasha Corporation
320 North Farmer Street
Otsego, Michigan 49078

Dear Mr. Blauwkamp:

Listed below are the results of the samples taken December 17, 1979 at Menasha, Otsego. Those results listed under the "Proc" column refer to process wastewater prior to mixing with noncontact cooling water (outfall 000). Those under "Proc-NCCW" refer to the mixture of process wastewater and noncontact cooling water prior to discharge to the Kalamazoo River. All values given in mg/l except pH. Values reported on the company's monthly operating report for the same day are given in parentheses.

	Proc	Proc-NCCW
pH	8.7 (8.7)	8.6
BOD	410 (350)	73
COD	6100	850
NO_3NO_2-N	0.35	0.75
NH_3-N	1.5	0.3
Organic N	52	11
Total P	4.4	0.74
Ortho P	0.70 (1.45)	0.15
Solids, Suspended	1280 (450)	160
Solids, Settleable	280 (20)	<5
*Mg	22	20
*K	63	8.7
*Na	2100	350
*Ca	44	78
Sulfide	0.90	0.26
Phenol	1.2 (.191)	.64
Cd, Total	<.01	<.01
Cr, Total	.15*	<.1
Cu, Total	.15	.029
Fe, Total	2.9	1.2
Ni, Total	<.05	<.05
Pb, Total	.23	<.05
Zn, Total	.34	.074
Mn Total	.51	.13
G.C. Scan	No volatile hydrocarbons	

*Estimated value, value may not be accurate

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THE GREAT LAKE STATE

R1026-1 79

A sample was also collected for phenol at outfall 002. The result was .74 mg/l, (.659 mg/l per company's MOR).

The grab samples agree quite well with the company's composite sample of process wastewater sample for pH and BOD, and the phenol result reported for outfall 002. Following the same trend found in the survey results of September 10-11, 1979, Menasha's result for ortho phosphorus was greater than that reported by the Environmental Protection Bureau (EPB) lab. The EPB results for the suspended solids, settleable solids, and the phenols in the process wastewater greatly exceeded the values reported by the company. Perhaps your entire set of laboratory procedures should be reviewed by CH_2M Hill in an attempt to locate the discrepancies in the values reported by the company and the EPB lab.

Interpretation of data as it applies to the bioassay test performed using the effluent collected December 17, 1979 has not yet been completed. When available, this report will be forwarded to you.

We are awaiting the progress report on the phenol and phosphorus problems, the sludge management policy, and the spent liquor storage. If you should have any questions or comments concerning the above matters, feel free to contact this office.

Sincerely,

WATER QUALITY DIVISION

Marge Spruit,
Water Quality Specialist

MS/mc

WQ-Lansing

MEN01510

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
JACOB A HOEFER
CARL T JOHNSON
E M LAITALA
HILARY F SNELL
HARRY H WHITELEY
JOAN L WOLFE
CHARLES G YOUNGLOVE

WILLIAM G MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A TANNER Director

State Office Building
350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

December 30, 1980

Mr. John Blauwkamp
Menasha Corporation
320 North Farmer Street
Otsego, Michigan 49078

Dear Mr. Blauwkamp:

Enclosed are two (2) copies of the "Report of an Industrial Wastewater Survey" that was conducted at Menasha Corporation, Otsego, on June 24-25, 1980. Flow measurements and samples were collected of the discharges from this facility.

Results did not meet the permit loading limitations for BOD_5 or suspended solids. The company has explained in letters dated July 2, 7, and 10, 1980 that this noncompliance condition was due to an aerator being out of service. Parts were obtained and the aerator was properly functioning by June 27, 1980.

The July 7, 1980 letter indicated the company was to implement a preventative maintenance program to avert the reoccurrence of similar situations. It is imperative that the company obtain an adequate supply of replacement parts for the wastewater treatment facilities to insure timely repairs and avoid future permit limitation excursions.

Phenol values for both outfall 000 and outfall 002 exceeded the permit limits. Historically, the company has had problems meeting the phenol limitation. Presently, an alternate test procedure is being investigated to determine what interfering factors exist with the standard 4 AAP test procedure due to the nature of Menasha's wastewater. After evaluating the data, the company may elect to apply for an alternate test procedure for this parameter. District staff are awaiting these results to assess the phenol limitations and the test procedure.

Survey results were compared to the values on the company's monthly operating report (MOR). For both BOD_5 and suspended solids at outfall 000, the survey values were almost twice those on the MOR. The reported loadings for these parameters, likewise, disagreed by the same factor.

Except for a slight discrepancy in the suspended solids values, the split composite values for outfalls 002 and 003 agreed. The split composite of outfall 000 did not compare well. The survey results were greater for BOD_5, suspended solids, settleable solids, and phenols. For the last several years, the company has not agreed with the survey regarding the amount of suspended solids discharged through outfall 000.

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Perhaps the company's quality control program should be addressed at this time. Duplicate samples are a good method to measure repeatability, but not necessarily accuracy. Samples from an outside source with whom results can be compared should be used to measure a laboratory's accuracy. Quality control samples are available both from the E.P.A. and private firms. The company could split samples with local firms analyzing for the same parameters. These samples can be incorporated into the routine work pattern on a monthly or quarterly basis for selected parameters. The Environmental Protection Bureau (E.P.B.) laboratory is available if lab personnel would be interested in observing the E.P.B. test procedures. Split samples of the company's effluent could be set up at this time. Programs such as this would probably aid the company in improving and/or maintaining the quality of the analyses performed in the laboratory.

It was noted during the survey that the composite samples at outfall 000 and 002 were not refrigerated during collection as required. The same situation was observed during E.P.A.'s inspection on February 12, 1980. Menasha was informed by letter of June 19, 1980 that proper technique for collecting composite samples included refrigerating the sample during collection. Steps should be taken immediately to correct this condition.

Comments or questions regarding the contents of this survey report should be submitted to this office by February 15, 1981.

Sincerely,

WATER QUALITY DIVISION

Marge Spruit

Marge Spruit,
Water Quality Specialist

MS/mc
Enclosures
cc: W.Q.D. Files, Lansing

MEN01512

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

Report of an
Industrial Wastewater Survey
Conducted at
MENASHA CORPORATION
All Outfalls No. 030019
NPDES Permit No. MI0003824
Allegan County
Otsego, Michigan
June 24-25, 1980

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Tuesday, June 24, 1980.

The results of this survey did not meet the final limitations for BOD and suspended solids in the combined discharges in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0003824 (Table 3). Survey results for phenols at outfalls 030171 (000) and 030134 (002), the process waste discharges, were above the permit limitations. Survey results for all other permit parameters met the final limitations in the permit.

Survey results are compared to values reported by the company in its Monthly Operating Report (MOR) in Table 3. In general the survey results are higher than the MOR reported values for BOD and suspended solids. Survey values for the combined process discharges (outfalls 000 and 002) are, on the average, nearly twice the values reported by the company.

Composite samples were split with the company for comparison of laboratory results (Table 4). BOD, suspended solids, settleable solids and phenol results do not compare well for outfall 030171 (000). While results for outfall 030134 compare well.

The last survey done at this facility was run September 10, 1979. Results from the previous survey and this survey are compared in Table 5. On the process discharge COD, BOD, suspended solids, dissolved solids, COD and phenol levels have increased over the levels found during the last survey.

Survey Comments

At the time of the survey, an aerator was down in the aeration lagoon. The company was aware of the problem and new parts were on order.

Composite samples on process outfall 030171 (000) failed during the first nine hours of the survey. It was restarted and functioned normally for the final 17 hours of the survey. Concentration values for this 17-hour composite

were used with the 24-hour flow rate to obtain daily loading values for this outfall.

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated medium [illegible] a non-sulfur pulping process. The mill operates 24 hours a day, 7 days [illegible], employing about 220 people.

The paper pulp used in the plant is derived from hardwood chips ([illegible]) recycled waste cardboard (35%). The hardwood chips are digested in a [illegible] liquor containing sodium carbonate and sodium hydroxide, pulped and refined. The pulp is conveyed through mechanical presses which remove 60% of the [illegible] liquor. The waste recycled cardboard is hydropulped and mixed with wood [illegible] pulp in a mixing chest. The pulp is then pumped to the two Fourdrinier [illegible] machines.

The spent liquor is sent to a 500,000 gallon liquor storage pond. [illegible] liquor is either given away to the county for use as a roadbed [illegible] in evaporators and incinerated in a fluid bed reactor to form a salt cake. [illegible] salt cake is reused by the plant.

Water Supply, Wastewater & Treatment

Menasha Corporation obtains process water and a portion of its [illegible] from either company wells or the City of Otsego. Powerhouse cooling [illegible] pumped from the Kalamazoo River and the plant's domestic [illegible] the city. The company uses an organosulfur biocide to control [illegible] at the well heads. The water used in the boilers is provided [illegible]

The plant has five outfalls to the Kalamazoo River (Figure 1): [illegible] (001) discharges cooling water from the primary refiners, air [illegible] magnetic clutch and #1 machine oil cooler. Outfall 030134 (002, [illegible] winder, the digester cooling waters and contaminants seal water [illegible] The wastewater is treated in a small aerated pond before [illegible]

Condenser cooling water from the powerhouse flows into a [illegible] outfall 030055 (003). Part of this flow combines with the treated [illegible] outfall 030171, and is discharged to the Kalamazoo River just below the [illegible] dam. The rest of the condenser cooling water is discharged upstream of [illegible]

Cooling water and miscellaneous floor and roof drainage discharges [illegible] the old ash-lime pond, outfall 030055 (004) to the river. [illegible] wash and fly and bottom ash from the powerhouse goes to the ash-lime [illegible] ponds and then to the treatment system.

The white water from the saveralls is discharged to the treatment system. The treatment system consists of ammonia addition prior to an aeration [illegible] clarifier and settling ponds. The effluent from the treatment system, [illegible] 030171 is mixed with cooling water before being discharged.

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Survey Procedure

The flows and samples were obtained as follows:

Outfall	Flow Measurement	Sampling
030171 (000)	Company's 24" rectangular weir; staff-installed water level recorder.	Automatic scoop-type sampler & individual grab samples.
030133 (001)	Company estimate.	Individual grab samples.
030134 (002)	Company's 24" full channel weir & staff installed water level recorder.	Automatic air activated sampler & individual grab samples.
030053 (003)	Company estimate.	Grab composite & individual grab samples.
030055 (004)	Company's 60° V-notch weir & staff-installed water level recorder.	Automatic air-activated sampler & individual grab samples.
System Influent (Raw waste)	--	Split of company sample.
River intake	--	Individual grab sample only.

A water level recorder provides a continuous account of the liquid level or head above the crest of a weir. A head versus time graph is obtained for the duration of the survey period. The total volume of wastewater over the weir during the survey period is computed from the graph.

An automatic sampler composites samples at timed intervals. Samples may be proportional to the instantaneous flow over the weir.

Sulfite composite samples are collected by the grab composite method.

A grab composite consists of a series of individual grabs composited into one sample.

An individual grab is a single instantaneous sample.

Samples were analyzed by the Environmental Protection Bureau Laboratories located in Lansing.

Samples were preserved according to Table 6. The results of the physical, chemical and bacteriological analyses are presented in Tables 1 & 2.

Menasha Corporation - Otsego

Table 1 Analyses of composite samples.

Outfalls		030171 (000)		030133 (001)	
Survey Period	From	6-24-80 - 2350[2]		6-24-80 - 1655	
	To	6-25-80 - 1650		6-25-80 - 1655	
Computed flow rate[1] (M^3/day)		2,400		1,570	
Highest flow rate (M^3/day)		2,730 - 6-25-80 @ 0015		1,890 - 6-25-80	
Lowest flow rate (M^3/day)		1,780 - 6-25-80 @ 1617		383 - 6-25-80	
		mg/l	kg/day	mg/l	kg/day
Suspended solids		940	2,300	8	[illegible]
Dissolved solids		7,200	17,000	530	849
Settleable solids		20	50	2	3
COD		5,600	13,000	120	191
Phenol		DL 3.6	8.6	0.59	[illegible]
BOD_5		1,400	3,400	27	[illegible]
Nitrite & nitrate nitrogen-N		0.44	1.0	0.01	[illegible]
Ammonia nitrogen-N		1.3	3.1	0.02	[illegible]
Kjeldahl nitrogen-N		44.	110	1.7	[illegible]
Orthophosphates-P		0.50	1.2	0.03	[illegible]
Total phosphorus-P		3.8	9.1	0.55	[illegible]
Total copper (Cu)		0.08	0.2	--	--
Total lead (Pb)		< 0.05	--	--	--
Total zinc (Zn)		0.22	0.53	--	--
Total manganese (Mn)		0.39	0.94	--	--
Total magnesium (Mg)		0.025	0.060	--	--
Total potassium (K)		0.06	0.1	--	--

1 - Flow rates used in the computation of kg/day.
2 - Composite sample represents the last 17 hours of the survey.
DL - Sample was analyzed using inappropriate dilution.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

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Menasha Corporation - Otsego

ble 1 (continued)

itfalls		030053 (003)		030055 (004)
irvey Period	From	6-24-80 - 1600		6-24-80 - 1545
	To	6-25-80 - 1600		6-25-80 - 1545
Computed flow rate[1] (M^3/day)		(24,900)		233
Highest flow rate (M^3/day)		--		278 - 6-25-80 @ 0923
Lowest flow rate (M^3/day)		--		233 - 6-25-80 @ 0123
	mg/l	kg/day	mg/l	kg/day
Suspended solids	8	200	< 2	--
Dissolved solids	370	9,200	660	150
COD	32	800	49	11
BOD_5	4.6	120	3.4	0.79
Nitrite & nitrate nitrogen-N	0.91	23	0.34	0.079
Ammonia nitrogen-N	0.31	7.7	0.50	0.12
Kjeldahl nitrogen-N	1.7	42	1.2	0.28
Orthophosphates-P	0.04	1	0.06	0.01
Total phosphorus-P	0.26	6.5	0.15	0.035

Outfall		System Influent
Survey Period	From	6-24-80 - 1500
	To	6-25-80 - 1500
		mg/l
Suspended solids		980
Dissolved solids		12,000
Settleable solids		730
COD		15,000
Pherol		18
BOD_5		3,900 L
Nitrite & nitrate nitrogen-N		0.76
Ammonia nitrogen-N		2.0
Kjeldahl nitrogen-N		40.
Orthophosphates-P		5.6
Total phosphorus-P		11

1 - Flow rates used in the computation of kg/day (obtained from company totalizer/MOR).
L - Actual value higher than figure indicated due to analytical difficulties.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

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Table 2 Analyses of grab samples.

Date	Time	Flow[1] M^3/day	Temp.[2] °C	pH[2] S.U.	Residual[2] Chlorine mg/l	D.O. mg/l	O&G I.R. mg/l	O&G Grav. mg/l	Susp. solids mg/l	Total diss. solids mg/l	Settle. solids mg/l	COD mg/l	Phenol ug/l
030171 (000)													
6-24-80	2350	2,600	27	8.4	--	--	3	< 2	1,200	7,200	640	5,600	2,500
6-25-80	1120	2,350	28	8.4	--	--	1	< 2	1,000	7,100	390	5,700	2,900
6-25-80	1405	--	28.5	8.4	--	--	2	< 2	1,100	7,300	320	5,600	2,800
030138 (001)													
6-24-80	1630	(443)	24.5	7.6	U	--	< 1	< 2	< 2	480	--	39	--
6-25-80	1405	(443)	22	7.6	--	--	< 1	< 2	< 2	420	--	22	--
030134 (002)													
6-24-80	2300	1,820	37	8.4	U	2.4	2	< 2	8	530	< 2	110	550
6-25-80	1000	1,820	39	8.3	--	2.4	2	< 2	30	500	< 2	130	710
030053 (003)													
6-25-80	0025	--	32	8.0	--	--	< 1	< 2	22	360	--	34	--
6-25-80	1025	--	31.5	7.8	--	--	< 1	< 2	22	360	--	37	--
030055 (004)													
6-24-80	2320	238	23.5	7.9	--	4.5	< 1	< 2	4	700	--	51	--
6-25-80	1040	238	23	7.8	--	4.0	< 1	< 2	2	660	--	51	--
Intake													
6-25-80	1020	--	24.5	8.0	--	--	< 1	< 2	24	380	--	31	--

1 - Flow at time of grab sampling.
2 - Values determined in the field at time of sampling.
( ) - Company estimate.

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Table 2 (continued)

Date	Time	BOD_5 mg/l	Nitrite & nitrate nitrogen mg/l	Ammonia nitrogen mg/l	Kjeldahl nitrogen mg/l	Ortho-phosphates-P mg/l	Total phosphorus-P mg/l	Total copper mg/l	Total lead mg/l	Total zinc mg/l	Total manganese mg/l
030171 (000)											
6-24-80	2350	1,100	0.55	1.3	51	1.2	3.9	0.07	< 0.05	0.21	0.37
6-25-80	1120	1,400	0.53	1.3	53	1.0	4.1	0.08	< 0.05	0.2	0.38
6-25-80	1405	1,100	0.60	1.3	48	0.9	4.0	0.08	< 0.05	0.2	0.39
030138 (001)											
6-24-80	1630	4.5	0.27	0.34	0.74	0.02	0.08	--	--	--	--
6-25-80	1405	1.7	0.45	0.19	0.30	0.02	0.12	--	--	--	--
030134 (002)											
6-24-80	2300	23	0.02	0.09	2.0	0.02	0.62	--	--	--	--
6-25-80	1000	33	0.01	0.06	1.8	0.02	0.30	--	--	--	--
030053 (003)											
6-25-80	0025	6.0	0.83	0.25	1.5	0.04	0.23	--	--	--	--
6-25-80	1025	7.3	1.0	0.43	1.7	0.07	0.27	--	--	--	--
030055 (004)											
6-24-80	2320	3.4	0.27	0.50	1.1	0.06	0.14	--	--	--	--
6-25-80	1040	3.5	0.35	0.58	1.1	0.06	0.12	--	--	--	--

	Total magnesium mg/l	Total potassium mg/l
030171 (000)		
6-24-80 2350	0.024	0.04
6-25-80 1120	0.024	0.06
6-25-80 1405	0.025	0.06

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Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Parameter (Unit)	NPDES Permit Final Limitations: Daily Average	NPDES Permit Final Limitations: Daily Maximum	June Monthly Operating Report: Monthly Average	June Monthly Operating Report: Monthly Maximum	June Monthly Operating Report: 6-24-80	June Monthly Operating Report: 6-25-80	Survey Results[1]
030171 (000)							
Flow (M^3/day)	--	--	2,570	3,040	2,470	2,180	2,400
BOD_5 (mg/l)	--	--	325	885	780	885	1,400 (1,100, 1,400, 1,100)
Suspended solids (mg/l)	--	--	335	810	570	400	940 (1,200, 1,000, 1,100)
Settleable solids (mg/l)	--	--	20	160	0	50	20 (640, 390, 320)
Phenol (ug/l)	300	--	431	1,063	1,063	--	3,600 (2,500, 2,900, 2,800)
Orthophosphates-P (mg/l)	--	1.0	0.29	0.66	--	--	0.50 (1.2, 1.0, 0.9)
(kg/day)	--	2.6	0.571	1.60	--	--	1.2
pH (S.U.)	not <6.0 nor >9.0		min. 8.3	8.8	8.6	8.7	(8.4, 8.4, 8.4)
Oil & Grease	No visible film		--	--	--	--	--
Oil & Grease (mg/l)	--	--	--	--	--	--	(<2, <2, <2)
030138 (001)							
Flow (M^3/day)	--	--	280.	852	443	534	443[2]
pH (S.U.)	not <6.0 nor >9.0		min. 7.0	7.5	7.0	--	(7.6, 7.6)
Oil & Grease	No visible film		--	--	--	--	--
Oil & Grease (mg/l)	--	--	--	--	--	--	(<2, <2)
030134 (002)							
Flow (M^3/day)	--	--	1,230	1,360	1,330	1,290	1,590
BOD_5 (mg/l)	--	--	6	10	7	6	27 (23, 33)
Suspended solids (mg/l)	--	--	8	28	9	7	8 (8, 30)
Settleable solids (mg/l)	--	--	7	17	10	5	2 (<2, <2)
Phenol (ug/l)	300	--	14	28	--	--	590 (550, 710)
pH (S.U.)	not <6.0 nor 9.0		min 7.7	8.6	8.3	8.6	(8.4, 8.3)
Oil & Grease	No visible film		--	--	--	--	--
Oil & Grease (mg/l)	--	--	--	--	--	--	(<2, <2)

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
2 - Company estimate
To obtain [illegible] multiply M^3/day [illegible]
To obtain [illegible] mg/l

Menasha Corporation - Otsego

Table 3 (continued)

Parameter (Unit)	NPDES Permit Final Limitations: Daily Average	NPDES Permit Final Limitations: Daily Maximum	June Monthly Operating Report: Monthly Average	June Monthly Operating Report: Monthly Maximum	June Monthly Operating Report: 6-24-80	June Monthly Operating Report: 6-25-80	Survey Results[1]	
030053 (003)								
Flow (M^3/day)	--	--	24,800	25,700	24,900	24,900	24,900[2]	
pH (S.U.)	not <6.0 nor >9.0		7.8	8.0	7.8	--		(8.0, 7.8)
Oil & Grease (visual)	No visible film		0	0	0	--	--	
Oil & Grease (mg/l)	--	--	--	--	--	--		(<2, <2)
Temperature (°F)	--	--	82	90	90	--		(89.6, 88.7)[3]
030055 (004)								
Flow (M^3/day)	--	303	261	450.	220.	220.	233	
Suspended solids (mg/l)	30	100	9	19	--	--	< 2	(4, 2)
Suspended solids (kg/day)	9.0	30	2	5.4	--	--	--	
Oil & Grease (visual)	No visible film		0	0	0	0	--	
Oil & Grease (mg/l)	--	--	--	--	--	--		(<2, <2)
pH (S.U.)	not <6.0 nor >9.0		min. 7.9	8.6	--	--		(7.9, 7.8)
Temperature (°F)	--	--	69	76	--	--		(73.4, 74.3)[3]
030186 (Combined 000 & 002)								
BOD_5 (kg/day)	--	1,695	840	1,940	1,940	1,940	3,400	
Suspended solids (kg/day)	--	1,455	860	1,420	1,420	880	2,300	
Flow (M^3/day)	--	--	--	--	--	--	3,990	

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
2 - Company estimate.
3 - Converted from °C to °F.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Table 4 Comparison of the laboratory analytical results obtained by Menasha Corporation and the Environmental Protection Bureau from the split composite samples.

Outfall	020171 (000) Menasha	020171 (000) E.P.B.
Flow (M^3/day)	2,470*	2,400
	mg/l	mg/l
BOD_5	780	1,400
Suspended solids	430	940
Settleable solids	0	20
Orthophosphates-P	0.37	0.50
Phenol	1.306	3.6

Outfall	030134 (002) Menasha	030134 (002) E.P.B.
Flow (M^3/day)	1,330*	1,590
	mg/l	mg/l
BOD_5	26	27
Suspended solids	14	8
Total dissolved solids	511	530
Settleable solids	3	2
Phenol	0.439	0.59

	030053 (003) Menasha	030053 (003) E.P.B.
Flow (M^3/day)	24,900	--
	mg/l	mg/l
Suspended solids (mg/l)	18	8

* Flow obtained from company totalizer.

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Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfall	030171 (000)	
Survey Date From	9-10-79	6-24-80
To	9-11-79	6-25-80
Flow Rate (M^3/day)	1,420	2,400
	mg/l	mg/l
Suspended solids	260	940
Dissolved solids	5,300	7,200
Settleable solids	50	20
COD	3,000	5,600
Phenols	0.185	3.6
BOD_5	100	1,400
Nitrite & nitrate nitrogen-N	0.33	0.44
Ammonia nitrogen-N	1.34	1.3
Orthophosphates-P	< 0.10	0.50
Total phosphorus-P	1.9	3.8
Total copper (Cu)	0.09	0.08
Total lead (Pb)	0.19	> 0.05
Total zinc (Zn)	0.24	0.22
Total manganese (Mn)	0.34	0.39
Total magnesium (Mg)	18	0.025
Total potassium (K)	62	0.06

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Table 5 (continued)

Outfall	030134 (002)	
Survey Date From	9-10-79	6-24-80
To	9-11-79	6-25-80
Flow Rate (M^3/day)	1,110	1,590
	mg/l	mg/l
Suspended solids	10	8
Dissolved solids	520	530
Settleable solids	< 10	2
COD	99	120
Phenols	0.36	0.59
BOD_5	21	27
Nitrite & nitrate nitrogen-N	0.36	0.01
Ammonia nitrogen-N	0.021	0.02
Orthophosphates-P	0.026	0.03
Total phosphorus-P	0.13	0.55

Outfall	030053 (003)	
Survey Date From	9-10-79	6-24-80
To	9-11-79	6-25-80
Flow Rate (M^3/day)	(27,500)*	(24,900)*
	mg/l	mg/l
Suspended solids	42	8
Dissolved solids	380	370
COD	38	32
BOD_5	13	4.6
Nitrite & nitrate nitrogen-N	0.67	0.91
Ammonia nitrogen-N	0.35	0.31
Total phosphorus-P	0.29	0.26

* Obtained by Company.

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Table 5 (continued)

Outfall	030055 (004)	
Survey Date From	9-10-79	6-24-80
To	9-11-79	6-25-80
Flow Rate (M^3/day)	323	233
	mg/l	mg/l
Suspended solids	13	< 2
Dissolved solids	560	660
COD	37	49
BOD_5	32	3.4
Nitrite & nitrate nitrogen-N	0.26	0.34
Ammonia nitrogen-N	0.21	0.50
Total phosphorus-P	0.12	0.15

Outfall	System Influent (Raw Waste)	
Survey Date From	9-10-79	6-24-80
To	9-11-79	6-25-80
Flow Rate (M^3/day)	(1,740)	
	mg/l	mg/l
Suspended solids	620	980
Dissolved solids	8,200	12,000
Settleable solids	230	730
COD	9,100	15,000
Phenols	12	18
BOD_5	3,100	3,900
Nitrite & nitrate nitrogen-N	0.59	0.76
Ammonia nitrogen-N	1.58	2.0
Kjeldahl nitrogen-N	--	40.
Orthophosphates-P	--	5.6
Total phosphorus-P	6	11

( ) - Company estimate.

Table 6 Sample Preservation

Parameter	Preservative
COD	10 drops conc. H_2SO_4/250 ml (to pH <2)
Phenols (Chlorine present)	Dechlorinated w/ferrous ammonium sulfate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4/ to pH <2
D.O.	Fixed on site.
Total Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2).

All samples cooled to 4°C and preserved upon collection and chain of custody maintained.

Survey by: Mike Stifler, Environmental Engineer
Amy Carter, Water Quality Technician
Edward Hamilton, Water Quality Technician

Contact with Management: Arthur Brindley, Certified Operator
John Blaukamp, Plant Engineer

Physical, Chemical & Bacteriological Analyses by: Environmental Protection Bureau Laboratory

Report by: Mike Stifler
Edward Hamilton
Point Source Studies Section
Environmental Services Division
Environmental Protection Bureau
Michigan Dept. of Natural Resources

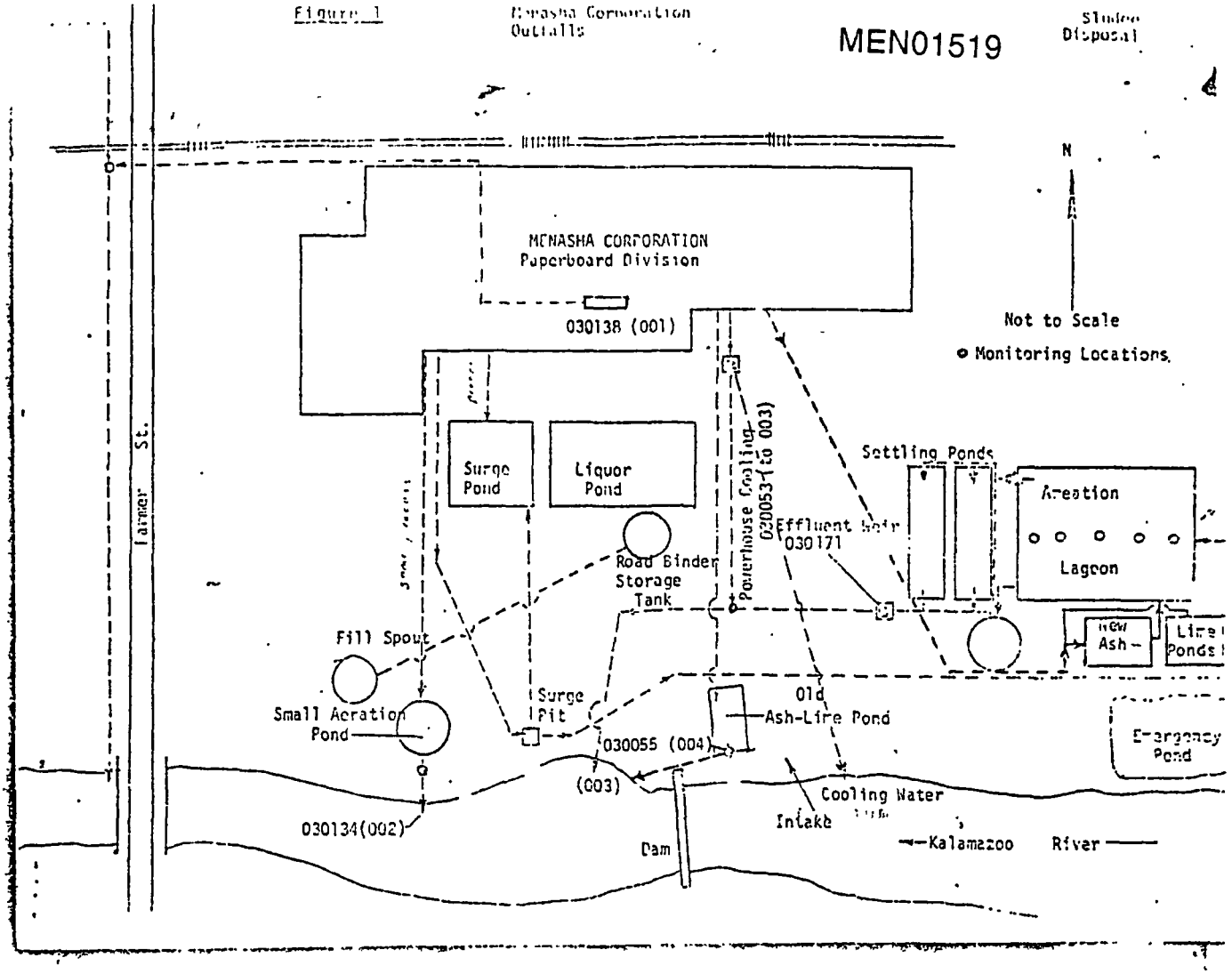
Distribution "A"
MM

Figure 1

Menasha Corporation
Outfalls

MEN01519

Sludge
Disposal



Keith

MEN01520

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
MARLENE J FLUHARTY
GORDON E GUYER
KERRY KAMMER
O STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

GORDON E. GUYER, Director
District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

April 17, 1987

John R. Blauwkamp, P.E.
Corporate Environmental Engineer
Menasha Corporation, Otsego Mill
320 North Farmer Street
Otsego, Michigan 49098

RE: Compliance Sampling Inspection (CSI)

Dear Mr. Blauwkamp:

Enclosed is a copy of a report on a CSI performed at the Otsego Mill on September 15-16, 1986.

The report indicates that the facility was in compliance with its NPDES permit during the inspection period. Analysis of replicate samples and routine recording of pH meter calibrations was suggested during the laboratory inspection.

Tables 1 and 2 of the report are compilations of the analysis taken during the CSI.

If you have any questions in this matter, please contact me at this office.

Sincerely,

SURFACE WATER QUALITY DIVISION

John Bantjes
Plainwell District
(616) 685-9886

JB:cw

R1026-1
1/86

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE MONITORING SECTION

Report of An
Industrial Wastewater Survey
Conducted At

Menasha Corporation
All Outfalls No. 030019
NPDES No. MI 0003824
Allegan County
Otsego, Michigan
September 15 & 16, 1986

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, September 15, 1986.

The results of this survey met final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit No. MI 0003824 for all outfalls. The results are shown in Table 3.

The survey results are also compared to the results reported by the facility on their September Monthly Operating Report (MOR). The results are shown in Table 3.

A portion of the composite sample at outfalls 030171(000) and 030134(002) and a grab sample at outfall 030055(004) were split with the facility to compare laboratory analyses. The results compare reasonably well (Table 4).

The results of this survey are compared to the results of a previous survey performed in October of 1982. Suspended solids and chemical oxygen demand (COD) at outfall 030134(002) are much less during this survey. The results are shown in Table 5.

Survey Comment.

The area where the treatment area exists is unsightly but there appears to be no non-point discharging or runoff to the Kalamazoo River.

The combined process and cooling discharge to the river (003) was highly colored. Lignin, from which the fibrous cellulose is released, would be the cause of this natural, dark brown color.

Menasha Corporation

Plant Processes

Menasha Corporation, Paperboard Division, produces corrugated medium through a non-sulfur pulping process. The mill operates 24 hours a day, 7 days per week employing approximately 234 people. The plant was producing 500 tons per day of corrugated medium at the time of the survey.

The paper pulp used in the plant is derived from 50% hardwood chips and 50% recycled waste cardboard. The hardwood chips are digested in a cooking liquor containing sodium carbonate then pulped and refined. The pulp is conveyed through a mechanical process which removes 70% of the cooking liquor. The waste recycled cardboard (from in-plant and out-of-plant sources) is hydropulped. The woodchip pulp, out-of-plant waste recycled cardboard pulp, and in-plant waste recycled cardboard pulp are combined in the mixing chest. The pulp is then pumped to the two fourdrinier paper machines. After the paper machine the medium is rewound and sold.

Hercon is used for special papers to prevent water absorption. "Nopco Wet" is added on an as needed basis. It is used as a wetting agent which increases the ability of the medium to hold the glue.

Water Supply, Wastewater & Treatment

Menasha Corporation obtains process water and a portion of its cooling water from either company wells or the City of Otsego. Powerhouse cooling water is pumped from the Kalamazoo River and the plant's domestic supply is obtained from the city. The company uses an organsulfur biocide to inhibit bacteria growth at the well heads. The water used in the boilers is provided further treatment.

The plant has five outfalls to the Kalamazoo River (Figure 1). Outfall 030138(001) discharge non-contact cooling water from the primary refiners, air compressors, drive magnetic clutch and #1 machine oil cooler. Outfall 030134(002) discharges the vacuum pump seal water, shower water, heat recovery condensate and non-contact cooling water. The wastewater is treated in a small aeration pond before being discharged.

Turbine condenser cooling water from the powerhouse flows into a monitoring sump, outfall 030053(00A). Part of this flow combines with the treated process flows, outfall 030171(000), and is discharged to the Kalamazoo River just below the company dam. The rest of the condenser cooling water is discharged upstream of the dam.

Cooling water, miscellaneous floor and roof drainage, boiler blowdown, and zeolite recharging wastewater discharges through outfall 030055(004) to the river.

The white water from the savealls along with lime slurry supernatent, seal and cooling waters, and recovery evaporator condensate are discharged to the treatment system. The treatment system consists of ammonia and phosphorus addition prior to an aeration lagoon, clarifier, and settling ponds. The effluent from the treatment system, outfall 030171(000), is mixed with cooling water before being discharged. At the time of the survey only one settling pond was in use. Lime is added directly to the aeration lagoon.

Fly and bottom ash from the baghouse is hauled to a landfill.

Menasha Corporation

Survey Procedure The flows and samples were obtained as follows:

Sample Description	Flow Measurement	Sampling Methods
030171 (000) Samples collected at discharge from aeration lagoon.	Company MOR value	Air activated automatic composite sampler and individual grab samples.
030138(001) Samples collected at company weir.	-	Individual grab samples.
030134(002) Samples collected at company weir in green bldg.	Company MOR value	Air activated automatic composite sampler and individual grab samples.
030053 (00A) Samples collected at company spliter box.	Company MOR value	Submergible composite sampler and individual grab samples.
030055(004) Samples collected at company weir.	Company MOR value	Grab composite and individual grab samples.

An automatic sampler composites samples at timed intervals. Samples may be proportional to the instantaneous flow over the weir or through the flume.

A submergible sampler obtains samples at a continuous rate.

Extractable organic composite samples are collected by the grab composite method.

A grab composite consists of a series of individual grabs composited into one sample.

An individual grab is a single instantaneous sample.

Samples were analyzed by the Environmental Protection Bureau Laboratories located in Lansing.

Samples were preserved according to Table 6. The results of the physical, chemical and bacteriological analyses are presented in Tables 1 & 2. Letter codes for laboratory results are defined in Table 6. A parameter listing for the organic scans is presented in Table 7. Unless otherwise specified all parameters in the scan were analyzed.

Menasha Corporation

Table 1 Analyses of composite samples.

Outfalls	030171 (000)		030134 (002)	
Survey Period From	9-15-86	1330	9-15-86	1410
To	9-16-86	1330	9-16-86	1410
Computed flow rate (MGD)	(0.65)		(0.45)	
	mg/l	lbs/day	mg/l	lbs/day
Suspended solids	480	2600	14	53
Dissolved solids	4500	24,000	540	2000
BOD5	180	980	15	56
CBOD 20	430	2300	-	
COD	3200 PT	17,000	77	290
TOC	790 PT	4300	22	83
Nitrite & Nitrate nitrogen-N	0.7 PT DM	4	0.05 DM	0.2
Ammonia nitrogen-N	0.8 PT DM	4	0.03 DM	0.1
Kjeldahl nitrogen-N	36 PT	200	1.1	4.1
Total phosphorus-P (Effluent)	2.8 PT	15	0.33	1.2
Ortho Phosphorus	0.32 PS	1.7	-	-
Alkalinity (as CaCO3)	1950	-	315	-
Chloride	100	500	32	120
Sulfate	220	1,200	63	240
	ug/l	lbs/day	ug/l	lbs/day
Phenols	390	2.1	140	0.53
Total aluminum (Al)	6,600	36	180	0.68
Total cadmium (Cd)	K20	-	K20	-
Total chromium (Cr)	80	0.4	K50	-
Total copper (Cu)	100	0.5	K20	-
Total iron (Fe)	3600	20.	1400	5.3
Total manganese (Mn)	950	5.1	230	0.86
Total nickel (Ni)	K50	-	K50	-
Total lead (Pb)	50	0.3	K50	-
Total zinc (Zn)	210	1.1	K50	
SCAN 6 - Phthalate Esters				
Bis (2-ethylhexyl)phthalate	65 BK,LH	0.35		
Others	K1			
SCAN 6 - Polar Pesticide				
Dieldrin	K0.05			
Endosulfan I	K0.05			
Endrin	K0.05			
Others	K0.05			

1 - Flow rates used in the computation of lbs/day.
Figure shown in ( ) obtained from company MOR.

Menasha Corporation

Table 1 continued.

Outfalls	030171 (000) ug/l	lbs/day	030134(002) ug/l	lbs/day
Scan 8 Phenols				
2,4-Dinitrophenol	K40		K41	
2-Methyl-4,6-dinitrophenol**	K40		K41	
4-Nitrophenol	K40		K41	
Pentachlorophenol	K40		K41	
Others	K10		K10	

Less than

* Reported as 4-Chloro-m-cresol
** Reported as 4,6-Dinitro-o-cresol

Menasha Corporation

Table 1 Analyses of composite samples.

Outfalls	030053(00A)		030055(004)	
Survey Period From	9-15-86	1355	9-15-86	1420
To	9-16-86	1355	9-16-86	1420
Computed flow rate (MGD)	(5.5)		(0.050)	
	mg/l	lbs/day	mg/l	lbs/day
Suspended solids	12	550	K4	
Dissolved solids	400	20,000	-	
COD	17	780	19	7.9
TOC	5.15	240	6.47	2.7
Nitrite & nitrate nitrogen-N	-		0.40	0.17
Ammonia nitrogen-N			0.19	0.079
Kjeldahl nitrogen-N			0.41	0.17
Total phosphorus-P (Effluent)			0.12	0.050
	ug/l	lbs/day	ug/l	lbs/day
Phenols			18.	0.0075
Total cadmium (Cd)			K20	
Total chromium (Cr)			K50	
Total copper (Cu)			K20	
Total iron (Fe)			1,400	0.58
Total manganese (Mn)			150	0.063
Total nickel (Ni)			K50	
Total lead (Pb)			K50	
Total zinc (Zn)			K50	

1 - Flow rates used in the computation of lbs/day.
Figure shown in ( ) obtained from company/ MOR.

Menasha Corporation

Table 2 Analyses of grab samples.

Outfall 030171(000)		Date and Time 9-15-86 1345	Date and Time 9-16-86 1020
Temp 1 F		72	63
pH 1 S.U.		8.4	8.4
Suspended solids	mg/l	400	510
Dissolved Solids	mg/l	4300	4200
BOD5	mg/l	150	200
COD	mg/l	3300 PT	3300 PT
TOC	mg/l	770 PT	740 PT
NO3 & NO2	mg/l	0.8 PT DM	0.6 PT DM
NH3	mg/l	0.9 PT DM	1.0 PT DM
Kjeldahl nitrogen	mg/l	37 PT	36 PT
Total Phosphorus	mg/l	2.7 PT	2.7 PT
Ortho Phosphorus	mg/l	0.35 PS	0.25 PS
Total aluminum (Al)	ug/l	6,500	6,600
Total cadmium (Cd)	ug/l	K20	K20
Total chromium (Cr)	ug/l	65	65
Total copper (Cu)	ug/l	90	95
Total iron (Fe)	ug/l	3,700	3,700
Total manganese (Mn)	ug/l	1000	1,100
Total nickel (Ni)	ug/l	K50	K50
Total lead (Pb)	ug/l	K50	K50
Total zinc (Zn)	ug/l	210	210
Oil & Grease	mg/l	3.5	4.3
SCAN 1 - Purgeable Halo-carbons			
Chlorobenzene	ug/l	K25	K25
Methylene chloride	ug/l	K25	K25
Others	ug/l	K5	K5
SCAN 2 - Purgeable Aromatic Hydrocarbons			
Benzene	ug/l	K25	K25
Ethylbenzene	ug/l	K25	K25
Toluene	ug/l	K25	K25
Xylene isomers(o,m,and p)	ug/l	K25	K25
SCAN 6 - Phthalate Esters			
Bis(2-ethylhexyl)phthalate	ug/l	47 BK,LH	19 BK,LH
Others	ug/l	K1	K1
SCAN 6 - Polar Pesticide			
Dieldrin	ug/l	K0.05	K0.05
Endosulfan I	ug/l	K0.05	K0.05
Endrin	ug/l	K0.05	K0.05
Others	ug/l	K0.05	K0.05

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Table 2 - Analyses of grab samples.

Outfall	030138(001)	Date and Time 9-15-86 1430	Date and Time 9-16-86 1030
Temp 1 F		81	65
pH 1 S.U.		7.2	7.3
Suspended Solids	mg/l	K4	K4
Dissolved Solids	mg/l	390	360
Oil & Grease Grav.	mg/l	21	6.7

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Table 2 Analyses of grab samples

Outfall 030134 (002)		Date and Time 9-15-86 1410	Date and Time 9-16-86 0940
Temp 1 F		86	79
pH 1 S.U.		8.0	8.2
Cl 1	mg/l	U	U
Suspended Solids	mg/l	37	11
Dissolved Solids	mg/l	590	520
Dissolved Oxygen 2	mg/l	5.1	5.8
BOD5	mg/l	32	-
COD	mg/l	110	84
TOC	mg/l	43	23
NO3 & NO2	mg/l	0.02 DM	0.03 DM
NH3	mg/l	0.03 DM	0.03 DM
Kjeldahl nitrogen	mg/l	1.4	1.1
Total Phosphorus	mg/l	0.39	0.34
Alkalinity (as CaCO3)	mg/l	324	318
Chloride	mg/l	34	32
Sulfate	mg/l	65	32
Phenols	ug/l	270	170
Total aluminum (Al)	ug/l	350	230
Total cadmium (Cd)	ug/l	K20	K20
Total chromium (Cr)	ug/l	K50	K50
Total copper (Cu)	ug/l	K20	K20
Total iron (Fe)	ug/l	1,400	1,300
Total manganese (Mn)	ug/l	210	190
Total nickel (Ni)	ug/l	K50	K50
Total lead (Pb)	ug/l	K50	K50
Total zinc (Zn)	ug/l	K50	K50
Oil & Grease Grav.	mg/l	28	19
SCAN 1 - Purgeable Halo-carbons			
Chlorobenzene	ug/l	K5	K5
Methylene chloride	ug/l	K5	K5
Others	ug/l	K1	K1
SCAN 2 - Purgeable Aromatic Hydrocarbons			
Benzene	ug/l	K5	K5
Ethylbenzene	ug/l	K5	K5
Toluene	ug/l	K5	K5
Xylene isomers(o,m,and p)	ug/l	K5	K5

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Table 2 Analyses of grab samples.

Outfall	030053(00A)	Date and Time 9-15-86 1355	Date and Time 9-16-86 1000
Temp 1 F		76	69
pH 1 S.U.		7.9	7.8
Suspended Solids	mg/l	20	22
Dissolved Solids	mg/l	400	410
Dissolved Oxygen	mg/l	8.9	7.9
COD	mg/l	14	19
TOC	mg/l	4.99	5.11
Oil & Grease Grav.	mg/l	27	32

Outfall	030055(004)	Date and Time 9-15-86 1420	Date and Time 9-16-86 1000
Temp 1 F		70	64
pH 1 S.U.		7.6	7.8
Suspended Solids	mg/l	13	K4
Dissolved Oxygen	mg/l	6.9	7.2
COD	mg/l	19	17
TOC	mg/l	6.52	6.7
NO3 & NO2	mg/l	0.24	0.44
NH3	mg/l	0.20	0.20
Kjeldahl nitrogen	mg/l	0.49	0.41
Total Phosphorus	mg/l	0.10	0.14
Phenols	ug/l	12.	17.
Oil & Grease Grav.	mg/l	21	K2

Menasha Corporation

Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Outfall	Parameter (Unit)	Final NPDES Permit/Limitations 30-Day Average	Final NPDES Permit/Limitations Daily Maximum	Monthly Operating Report Monthly Average	Monthly Operating Report Monthly Maximum	Monthly Operating Report 9-15-86	Monthly Operating Report 9-16-86	Survey Results[1]
030171(000)	Flow MGD			.569	.816	0.672	0.620	0.65
	Phosphorus-soluble mg/l							.32(.35, .25)
	lbs/day	K8.0		.76	2.28			1.7
	BOD_5 mg/l			165	267	240	267	180(150,200)
	lbs/day							980
	Suspended Solids mg/l			533	700	700	666	480(400,510)
	lbs/day							2600
	pH	Not K6	Nor > 9		8.6	8.4	8.5	(8.4,8.4)
030134(002)	Flow MGD			.397	.476	.452	.456	.45
	BOD_5 mg/l			12.0	30.0	14.0	10.0	15(32)
	lbs/day			42	119	53	38	56
	Suspended Solids mg/l			12	24	7	6	14(37,11)
	lbs/day			40	77	26	23	53
	pH	Not K6	Nor > 9		8.5	8.3	8.5	(8.0, 8.2)
030186(000)[2]	BOD_5 lbs/day		3725	844	1479	1398	1419	1036
(030171(000) + 030134(002))	Suspended Solids lbs/day	3584	5376	2543	3949	3949	3436	2653
030138(001)	Flow MGD					.233	.216	
	pH	Not K6	Nor > 9		7.4	- -	7.4	(7.2, 7.3)
030055(004)	Flow MGD			.063	0.119	0.050	0.050	0.05
	Suspended Solids mg/l	K20	50	4	17	0	--	K4(13, K4)
	lbs/day	K39	96	2	7	0	--	--

1 - Survey results are for the composite sample. Grab sample results are shown in parentheses ( ).

2 - 030186(000) = process wastewater from 030171(000) + 030134(002).

Menasha Corporation

Table 4 Comparison of the laboratory analytical results obtained by Menasha Corporation and the Environmental Protection Bureau from the split composite and grab samples.

Outfall	030171 (000)		030134 (002)	
Sample Time & Date	9-15-86	1330	9-15-86	1410
	9-16-86	1330	9-16-86	1410
	Company	E.P.B.	Company	E.P.B.
	mg/l		mg/l	
BOD_5	254	180	19	15
Suspended Solids	680	480	13	14

Outfall	030055(004)	
Sample Time & Date	9-16-86	1000
	Company	E.P.B.
	mg/l	
Suspended Solids	0	K4

Menasha Corporation

Table 5 Comparison of the previous survey results with the results obtained in this survey

Outfalls	030171(000)		030134(002)	
Survey Period From	10-12-82	9-15-86	10-12-82	9-15-86
To	10-13-82	9-16-86	10-13-82	9-16-86
Computed Flow Rate (MGD)	0.73	0.65	0.45	0.45
	mg/l	mg/l	mg/l	mg/l
Suspended Solids	380	480	66	14
Dissolved Solids	6,200	4,500	880	540
COD	3,400	3,200	500	77
Nitrite & nitrate nitrogen-N	K0.5	0.7	0.06	0.05
Ammonia nitrogen-N	1.0	0.8	0.16	0.03
Kjeldahl nitrogen-N	29.	36.	2.3	1.1
Total phosphorus-P (effluent)	1.6	2.8	0.38	0.33
Alkalinity (asCaCO3)	4,200	1,950	540	315
	ug/l	ug/l	ug/l	ug/l
Phenols	65	390	260	140
Total aluminum (Al)	8,300	6,600	K1000	180
Total cadmium (Cd)	K20	K20	K20	K20
Total chromium (Cr)	55	80	K50	K50
Total copper (Cu)	70	100	K20	K20
Total nickel (Ni)	K50	K50	K50	K50
Total lead (Pb)	80	50	K50	K50
Total zinc (Zn)	150	210	K50	K50
SCAN 6 - Phthalate Esters				
Bis (2-ethylhexyl) phthalate	11.	65		
Butyl Benzyl phthalate	0.45	K1		
Di-n-butyl phthalate	5.5	K1		
Diethyl phthalate	6.4	K1		
Dimethyl phthalate	3.7	K1		
Others	U	K1		
SCAN 6 - Polar Pesticide				
Dieldrin	U	K0.05		
Endosulfan I	U	K0.05		
Endrin	U	K0.05		
SCAN 8 - Phenols				
2,4-Dinitrophenol	U	K40	U	K41
2-Methyl-4,6-dinitrophenol	U	K40	U	K41
4-Nitrophenol	U	K40	U	K41
Pentachlorophenol	U	K40	U	K41
Phenol			46	K10
Others	U	K10	U	K10

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Table 5 Comparison of the previous survey results with the results obtained in this survey

Outfalls	030053 (00A)		030055(004)	
Survey Period From	10-12-82	9-15-86	10-12-82	9-15-86
To	10-13-82	9-16-86	10-13-82	9-16-86
Computed Flow Rate (MGD)	6.6	5.5	0.2	0.050
	mg/l	mg/l	mg/l	mg/l
Suspended solids	8	12	K4	K4
Dissolved solids	390	400		
COD	29	17	33	19
TOC	6.6	5.15	13.	6.47
Nitrite & nitrate nitrogen-N			0.36	0.40
Ammonia nitrogen-N			0.26	0.19
Kjeldahl nitrogen-N			0.71	0.41
Total phosphorus-P(effluent)			0.15	0.12
	ug/l	ug/l	ug/l	ug/l
Total cadmium (Cd)			K20	K20
Total chromium (Cr)			K50	K50
Total copper (Cu)			K20	K20
Total nickel (Ni)			K50	K50
Total lead (Pb)			K50	K50
Total zinc (Zn)			K50	K50

Menasha Corporation

Table 6 Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH K2).
Phenols (Chlorine Present)	Dechlorinated w/ferrous ammonium sulfate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4 to pH K2.
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l), 10 drops 10 N NaOH (to pH K12)/250 ml.
D.O.	Fixed on site
Total Metals	2 ml. 1:1 HNO_3/250 ml (to pH K2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3/250 ml (to pH K2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml to dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH K2).
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10N NaOH to pH9/250 ml.
Base-neutral & Acid Extractables Purgeable Organics	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).

Samples preserved as required, cooled to 4°C with chain of custody

Lab Letter Codes

PT - Recommended laboratory preservation technique not used.

DM - Sample was diluted to reduce possible matrix interference.

PS - Possible interference may have affected the accuracy of the laboratory result.

BK - Reported value has been corrected for a laboratory blank which was greater than half of the detection limit but less than half of the reported value.

MEN01536

Menasha Corporation

Lab Letter Codes Contd.

LH - Quality control indicated possible low recovery. The actual level may have been higher than the reported value.

U - Indicates material was analyzed for but not detected. In the case of species, U indicates undetermined sex.

Survey by: Brock Howard, Water Quality Engineer
Joseph Hey, Water Quality Technician
Chris Little, Water Quality Technician

Contact with Management: John R. Blauwkamp

Laboratory Analyses by: Environmental Protection Bureau Laboratory

Report by: Chris Little & Brock Howard
Grand Rapids District Office
Surface Water Quality Division
Environmental Protection Bureau
Michigan Department of Natural Resources

Table 7

MEN01537

ORGANIC SCAN PARAMETER LISTING

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane
Bromoform
Carbon tetrachloride
Chlorobenzene
Chloroform
Dibromochloromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,3-Dichloropropene
Methylene chloride (request only)
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichlroethane
Trichloroethene

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene
Ethylbenzene
Toluene
Xylene isomers (o, m, and p)

SCAN 3 - Chlorinated Hydrocarbons, Polychlorinated Biphenyl & Organochlorine Pesticides

g-BHC (lindane)
2-Chloronaphthalene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Octachlorocyclopentene
Pentachloronitrobenzene
1,2,4-Trichlorobenzene

Aroclor 1242
Aroclor 1254
Aroclor 1260
Aldrin
BP-6 (PBB)
a-Chlordane
g-Chlordane
4,4'-DDD
4,4'-DDE
1,4'-DDT
4,4'-DDT
Heptachlor
Heptachlor epoxide
Hexabromobenzene
Methoxychlor
Mirex

SCAN 6 - Phthalate Esters & Polar Pesticides

Bis (2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate
Diethyl phthalate
Dimethyl phthalate
Di-n-octyl phthalate
Dieldrin
Endosulfan I
Endrin

SCAN 7 - Polynuclear Aromatic Hydrocarbons

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(ghi)perylene
Benzo(a)pyrene
Chrysene
Dibenzo (a,h) anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

SCAN 8 - Phenols

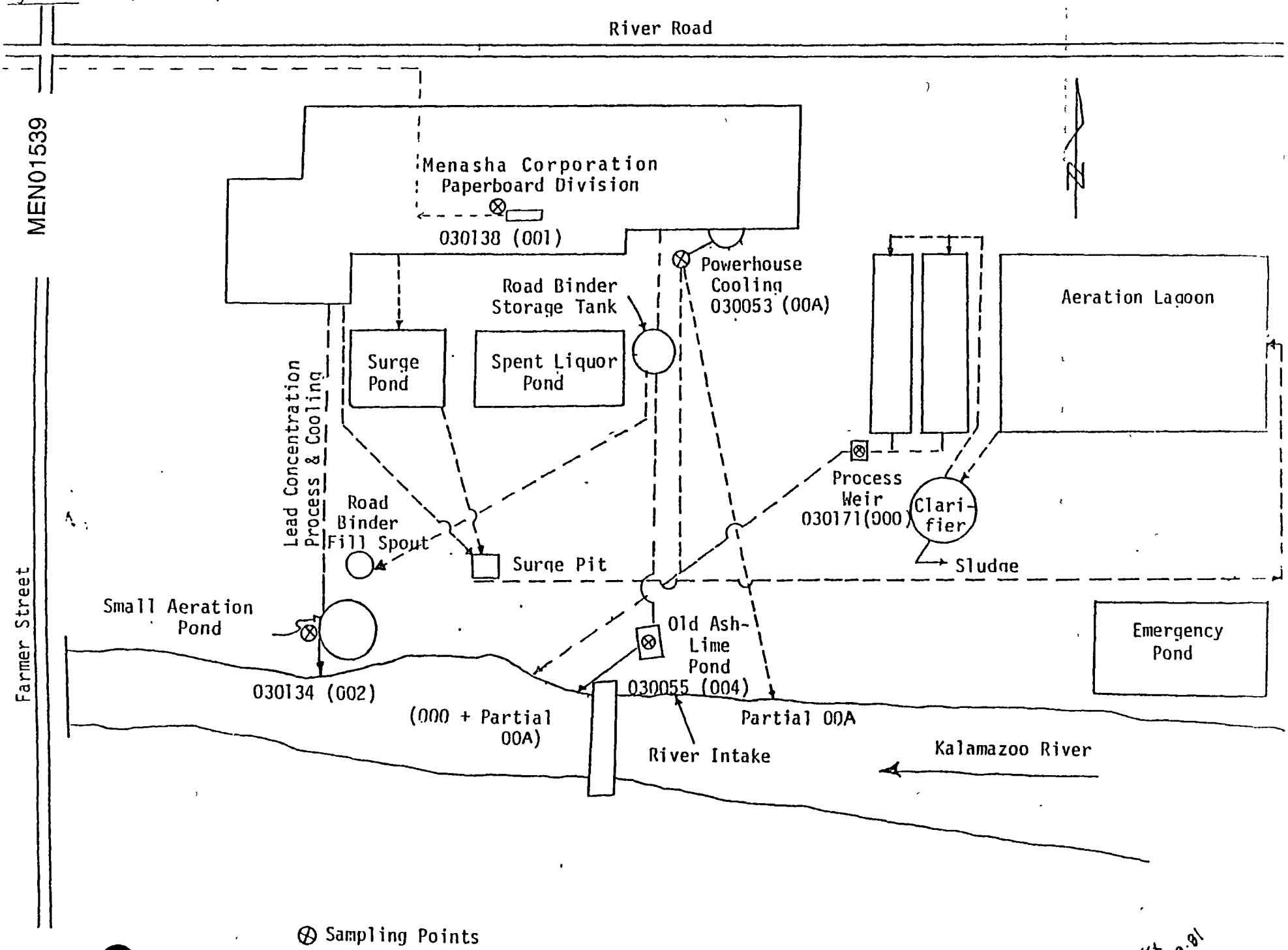
4-Chloro-3-methylphenol*
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol **
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

SCAN 9 - Aromatic Amines (method not validated)

Curene(4,4' -Methylene(bis)2-chloroaniline)
3,3 -Dichlorobenzidine

* Reported as 4-Chloro-m-cresol
** Reported as 4,6-Dinitro-o-cresol

igure 1 Menasha Corporation - Otsego



TEX 9.81

MEN01540

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
MARLENE J FLUHARTY
KERRY KAMMER
O STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

GORDON E GUYER, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

April 26, 1988

Keith B. Kling,
Waste Treatment Supervisor
Otsego Paperboard Division
Menasha Corporation
P.O. Box 144
Otsego, Michigan 49078

RE: Compliance Sampling Inspection (CSI)

Dear Mr. Kling:

On April 18, 1988 staff of the Michigan Department of Natural Resources conducted a CSI at the Otsego Mill. The results of sampling are not yet available and will be forwarded at a later date. The following comments pertain to the facility inspection.

The laboratory is well equipped and staffed. A Quality Assurance/ Quality Control program is used. However, the records kept are not complete.

You are currently reviewing the laboratory procedures and preparing a laboratory manual. Included should be bench sheets for the different analysis to be made. It is important to include spaces on the bench sheets to record equipment temperatures and calibrations, as well as the name of the analyst performing the test. Also included should be the pH calibration procedure using two buffers.

The V-notch weir at outfall 004 should be maintained regularly to assure that no debris collects in the V-notch. Oil absorbent pads used in this outfall must be kept away from the V-notch to prevent false readings.

The refrigerator at outfall 000 was not functioning properly because the door could not be kept closed. As a result, it was not possible to maintain the proper temperature.

Please notify this office not later than May 20, 1988 of the corrective actions you have taken.

If, in the meantime, you have any questions in this matter, please contact me at this office.

Sincerely,

SURFACE WATER QUALITY DIVISION

John M. Bantjes
Plainwell District
(616) 685-9886

JB:clw

cc: Brock Howard

FORM 561

MEN01542

memo / CORPORATION

TO: Distribution

DATE: April 27, 1988

SUBJECT: DNR Survey

FROM: Keith Kling KBK

During the survey by the DNR on April 18 and 19, a close examination of our testing methods and techniques was made. In general, they were very pleased with our test procedures. One problem which was brought up was the fact that we do not wash our suspended solids fiber pads before using them. In looking at "standard methods", a triple rinse of 20ml per rinse is required. This should be done after the pad has been labeled. The pad must then be put in to the oven a minimum of one hour before use. This additional step in the test makes it very important that the waste treatment operator on duty have at least one set of filter pads washed and in the oven for use the next day. This change in procedure is to be started on April 25.

cc/ Al Switzenberg
Gary Roys
Fred Katje
Bill Youtzy
John Bonham

/kls
dnrsrvy.88

MEN01543

ge suitable for bacterial growth. Com- e stabilization of a sample may require riod of incubation too long for practical poses; therefore, 5 d has been accepted he standard incubation period.

leasurements of BOD that include both onaceous oxygen demand and nitro- ous oxygen demand generally are not useful; therefore, where appropriate, an inhibiting chemical may be used to prevent ammonia oxidation.[1] With this technique carbonaceous and nitrogenous demands can be measured separately. The inclusion of ammonia in the dilution water demonstrates that there is no intent to include the oxygen demand of reduced nitrogen forms in the BOD test. If this ammonia were oxidized, errors would result because the oxygen use would not be due exclusively to pollutants in the sample.

The extent of oxidation of nitrogenous compounds during the 5-d incubation period depends on the presence of microorganisms, capable of carrying out this oxidation. Such organisms usually are not present in raw sewage or primary effluent in sufficient numbers to oxidize significant quantities of reduced nitrogen forms in the 5-d BOD test. Currently, many biological treatment plant effluents contain significant numbers of nitrifying organisms Because oxidation of nitrogenous compounds can occur in such samples, inhibition of nitrification is recommended for samples of secondary effluent, for samples seeded with secondary effluent, and for samples of polluted waters.

The method included here contains both a dilution water check (5*b*) and a dilution water blank (5*h*). The dilution water check is to determine the acceptability of a particular batch of dilution water before it is used for BOD analysis. Seeded dilution waters are checked further for acceptable quality by measuring their consumption of oxygen from a known organic mixture, usually glucose and glutamic acid (5*c*).

The dilutio[illegible] blank, made at the same time that samples are analyzed, provides a further quality control on dilution water at the time of analysis as well as on the cleanliness of apparatus such as BOD bottles.

The procedure for determining immediate oxygen demand (IDOD) has been eliminated because: (*a*) it was not clear whether IDOD should be reported in 5-d BOD data; (*b*) the measurement was inaccurate because of the small differences between initial DO and DO after 15 min; (*c*) arbitrary selection of 15 min for measuring IDOD did not necessarily include all short-term oxygen-consuming reactions; and (*d*) the IDOD is, in some instances, an iodine demand (during the DO determination) rather than a true DO demand. The methods outlined here require determining initial DO immediately after making the dilution. In this way all oxygen uptake (including that occurring during the first 15 min) is included in the BOD measurement.

Although only the 5-d BOD is described here, many variations of oxygen demand measurements exist. These include using shorter and longer incubation periods, tests to determine rates of oxygen uptake, continuous oxygen uptake measurements by respirometric techniques, etc.

2. Sampling and Storage

Samples for BOD analysis may degrade significantly during storage between collection and analysis, resulting in low BOD values Minimize reduction of BOD by analyzing the sample promptly or by cooling it to near-freezing temperature during storage. However, even at low temperature, keep the holding time to a minimum. Warm the chilled samples to 20°C before analysis; some storage time can be used to accomplish this conveniently.

a. Grab samples: If analysis is begun within 2 h of collection, cooling is unnecessary. If analysis is not started within 2 h of sample collection, keep sample at or below 4°C from the time of collection. Begin analysis within 6 h of collection; when this is not possible because the sampling site is distant from the laboratory, store at or below 4°C and report length and temperature of storage with the results. In no case start analysis more than 24 h after grab sample collection. When samples are to be used for regulatory purposes make every effort to deliver samples for analysis within 6 h of collection.

b. Composite samples: Keep samples at or below 4°C during compositing. Limit compositing period to 24 h. Use the same criteria as for storage of grab samples, starting the measurement of holding time from the end of the compositing period. State storage time and conditions as part of the results.

3. Apparatus

a. Incubation bottles: 250- to 300-mL capacity, with ground-glass stoppers. Clean bottles with a detergent, rinse thoroughly, and drain before use. As a precaution against drawing air into the dilution bottle during incubation, use a water-seal. Obtain satisfactory water seals by inverting bottles in a water bath or adding water to the flared mouth of special BOD bottles. Place a paper or plastic cup or foil cap over the flared mouth of the bottle to reduce evaporation of the water seal during incubation.

b. Air incubator or water bath: Thermostatically controlled at 20 ± 1°C. Exclude all light to prevent possibility of photosynthetic production of DO.

4. Reagents

a. Phosphate buffer solution: Dissolve 8.5 g KH_2PO_4, 21.75 g K_2HPO_4, 33.4 g $Na_2HPO_4 \cdot 7H_2O$, and 1.7 g NH_4Cl in about 500 mL distilled water and dilute to 1 L. The pH should be 7.2 without further adjustment. Discard reagent (or any of the following reagents) if there is any sign of biological growth in the stock bottle.

b. Magnesium sulfate solution: Dissolve 22.5 g $MgSO_4 \cdot 7H_2O$ in distilled water and dilute to 1 L.

c. Calcium chloride solution: Dissolve 27.5 g $CaCl_2$ in distilled water and dilute to 1 L.

d. Ferric chloride solution: Dissolve 0.25 g $FeCl_3 \cdot 6H_2O$ in distilled water and dilute to 1 L.

e. Acid and alkali solutions, 1N: For neutralization of caustic or acidic waste samples.

f. Sodium sulfite solution, 0.025N Dissolve 1.575 g Na_2SO_3 in 1000 mL distilled water. This solution is not stable; prepare daily.

g. Nitrification inhibitor: 2-chloro-6-(trichloro methyl) pyridine.†

h. Glucose-glutamic acid solution Dry reagent-grade glucose and reagent-grade glutamic acid at 103°C for 1 h. Add 150 mg glucose and 150 mg glutamic acid to distilled water and dilute to 1 L. Prepare fresh immediately before use.

5. Procedure

a. Preparation of dilution water: Place desired volume of water in a suitable bottle and add 1 mL each of phosphate buffer, $MgSO_4$, $CaCl_2$, and $FeCl_3$ solutions/L of water. Seed dilution water, if desired, as described in 5*d*. Test and store dilution water as described in 5*b* and 5*c* so that water of assured quality always is on hand.

b. Dilution water check: Use this procedure as a rough check on quality of dilution water. If dilution water has not been stored for quality improvement, add sufficient seeding material to produce a DO uptake of 0.05 to 0.1 mg/L in 5 d at 20°C. Do not seed dilution water that has been stored for quality improvement. Incubate a BOD bottle full of dilution water for 5 d at 20°C. Determine initial and final DO as in 5*g* and 5*j*. The DO uptake in 5 d at

†Nitrification Inhibitor 2533, [illegible] Chemical Co., or equivalent

MEN01544

MENASHA CORPORATION

PAPERBOARD GROUP

May 10, 1988

John M. Bantjes
District 12 Headquarters
P.O. Box 355
Plainwell, MI 49080

Dear John:

In answer to your letter of April 26, 1988 concerning the Compliance Sampling Inspection undertaken on April 18, the following corrective actions are being taken.

1. As mentioned in your letter, a laboratory manual is presently being prepared. It is being modeled after the examples shown at the QA/QC seminar I recently attended and should meet your requirements.

2. pH 10 buffer has been ordered for our pH meter calibration procedure. When this arrives both pH7 and pH10 buffers will be used to calibrate the meter.

3. During your inspection you found the oil absorbent pads in 004 touching the V-notch. These have been moved back and temporarily held in place with a metal rod. Installation of a permanent barrier will be completed as the operation allows.

4. A stick was found lodged in the notch at 004 weir. This is being checked daily to insure accuracy of flow.

5. The refrigerator door at 000 weir was not closing properly at the time of the inspection. This door has been readjusted and is now closing properly.

If there are further questions on this matter feel free to call at 692-6141.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith B. Kling
Environmental Supervisor

cc/ John Bonham
Al Switzenberg

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616 692 6141

MEN01545

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
MARLENE J FLUHARTY
KERRY KAMMER
O STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE

JAMES J BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

DAVID F HALES Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

September 28, 1988

Keith B. Kling
Waste Treatment Supervisor
Otsego Paperboard Division
Menasha Corporation
P.O. Box 144
Otsego, Michigan 49078

Dear Mr. Kling:

SUBJECT: Compliance Sampling Inspection (CSI)

Enclosed are the results of analysis and biomonitoring of samples collected during the CSI conducted by staff of the Michigan Department of Natural Resources (MDNR) on April 18-19, 1988.

The results of biomonitoring indicate that the discharges from outfalls 002 and 003 are not acutely toxic to fathead minnows. Additional monitoring is not required at this time. However, periodic biomonitoring of these outfalls will be scheduled.

The flows indicated in the biomonitoring report are the total permitted flow from outfall 002 and the total permitted treated process water flow from outfall 000 via outfall 003. Samples were collected at the weir for 002 and at the end of the pipe for 003.

The results of analysis by MDNR of samples taken during the CSI show a discrepancy with the results obtained by your laboratory on the split samples for suspended solids and biochemical oxygen demand (Table 5).

The results obtained by MDNR indicate that the daily maximum limit of the permit was violated for suspended solids on outfalls 000 and 002 (combined). (Table 4)

We request that you submit a written rationale for these discrepancies not later than October 31, 1988.

Table 3 lists the results of analysis for toxic organic chemicals. None were detected.

If, in the meantime, you have any question or comments in these matters, please contact me at this office.

Sincerely,

SURFACE WATER QUALITY DIVISION

John Bantjes
Plainwell District
616-685-9886

JB/eo
cc: CSI/Biomonitoring Distribution
Tickle 10/31/88

MEN01547

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Wastewater Survey
Conducted at
Menasna Corporation
Paperboard Division
All Outfalls No. 030019
NPDES No. MI0003324
Allegan County
Ostego, MI
04/18/88

SURVEY SUMMARY

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, April 18, 1988.

The results of this survey are compared to the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI030019, in Table 4.

The results of this survey are compared to the results reported by the facility in their April Discharge Monitoring Report (DMR) in Table 4.

A grab sample from outfalls 030171 (000), 030134 (002), and 030055 (004) were split with the facility to compare laboratory analyses. The results are shown in Table 5.

The results of the physical, chemical and bacteriological analyses are presented in Tables 1 & 2. The results of the organic scan analyses are presented in Table 3.

File

RECEIVED
SEP 13 1988
SWQD-Plainwell

[illegible]

[illegible]

Sample [illegible]	[illegible]	Sampling [illegible]
030171 ([illegible]) Process waste sampled at [illegible] discharge.	[illegible]	Air-Activated [illegible] sampler [illegible] grab samples.
030053 (00A) Turbine cooling water sampled at splitter box.	Company DMR	Submergible [illegible] and individual grab samples.
030138 (001) Cooling water sampled at company weir.		Individual grab samples.
030134 (002) Process and cooling-sampled at company's 24" rectangular weir.	Company Totalizer	Air-Activated composite sampler and individual grab samples.
[illegible]ond Influent Sampled at surge pit.		Individual grab samples.
030055 (004) Sampled at company weir.	Company DMR	Grab composite and individual grab samples.

An automatic sampler composites samples at timed intervals. Samples may be proportional to the instantaneous flow over the weir or through the flume.

A submergible sampler obtains samples at a continuous rate.

Extractable organic composite samples are collected by the grab composite method.

A grab composite consists of a series of individual grabs composited into one sample.

An individual grab is a single instantaneous sample.

Samples were analyzed by the MDNR Environmental laboratories located in Lansing.

[illegible]amples were preserved according to Table 7. The results of the physical, chemical and bacteriological analyses are presented in Tables 1 & 2. The results of the organic scans are presented in Table 3. Letter codes for laboratory results are defined in Table 7.

[illegible]

Outfall	[illegible]			[illegible]	
Survey Period Tr[illegible]	[illegible]			[illegible]	
[illegible]	[illegible]			[illegible]	
Computed Flow Rate	[illegible]			[illegible]	
	ug/l	lbs/day		ug/l	lbs/day
Suspended Solids	1900	[illegible]		15	663
Dissolved Solids	5000	[illegible]		3-0	15029
BOD-5	360	[illegible]			
CBOD-5	400	[illegible]			
CBOD-20	1100	[illegible]			
COD	3900	[illegible]		19	840
TOC	1200	[illegible]		5.4	239
NO3 + NO2	.8	3	DM	1.1	49
NH3	1.4	5	DM	.07	3
Kjeldahl Nitrogen	45	150		.64	28
Total Phosphorus	3.9	13	DS	.08	4
Ortho Phosphate	.07	0	HT,DM		
Alkalinity (as CaCO3)	3348	NA		223	NA
Hardness (as CaCO3)	340	NA		275	NA
Conductivity (umho/cm)				576	NA
Calcium	90	300		72	3183
Chloride	200	667		14	619
Potassium	86	287		1.6	71
Magnesium	28	93		23	1017
Sodium	1600	5338		19	840
Sulfate	280	934		58	2564
	ug/l	lbs/day		ug/l	lbs/day
Phenols	450	1.501			
Total Cadmium (Cd)	1.6	.005	DM	<.2	NA
Total Chromium (Cr)	<18	NA	DM	<3	NA
Total Copper (Cu)	80	.267	DM	1.8	.080
Total Lead (Pb)	46	.153		2	.088
Total Nickel (Ni)	<25	NA	DM	<4	NA
Total Zinc (Zn)	250	.834		5	.221
Total Iron (Fe)	3400	11.342		680	30.057
Total Aluminum (Al)	11000	36.696		92	4.067
Total Silver (Ag)	<2	NA		<.5	NA
Total Manganese (Mn)	1300	4.337		56	2.475

[illegible]

ABLE 1 - Analyses of [illegible]

Outfall	[illegible]			[illegible]	
Survey Period From	[illegible]			[illegible]	
To	04/19/[illegible]			[illegible]	
Computed Flow Rate	.48 MGD			.062 MGD	
	mg/l	lbs/day		mg/l	lbs/day
Suspended Solids	100	400		<4	NA
Dissolved Solids	730	2922		530	273
CBOD-20	140	560			
BOD-5	99	396		<2	NA
CBOD-5	100	400			
COD	410	1641		19	10
TOC	120	480		5.8	3
NO3 + NO2	<.1	NA	DM	.54	0
NH3	<.1	NA	DM	.16	0
Kjeldahl Nitrogen	2.8	11		.29	0
Total Phosphorus	1	4	DS	.16	0
Ortho Phosphate	.1	0	DM		
Alkalinity (as CaCO3)	396	NA		361	NA
Hardness (as CaCO3)	290	NA		280	NA
Calcium	72	288		67	35
Chloride	34	136		25	13
Potassium	4.3	17		2.2	1
Magnesium	27	108		27	14
Sodium	97	388		82	43
Sulfate	62	248		67	35

	ug/l	lbs/day	ug/l	lbs/day
Phenols	1200	4.804	11	.006
Total Cadmium (Cd)	.4	.002	<.2	NA
Total Chromium (Cr)	<3	NA	<3	NA
Total Copper (Cu)	8.9	.036	5.7	.003
Total Lead (Pb)	4.3	.017	<1	NA
Total Nickel (Ni)	<4	NA	<4	NA
Total Zinc (Zn)	22	.088	4.2	.002
Total Iron (Fe)	<40	NA	<40	NA
Total Aluminum (Al)	540	2.162	71	.037
Total Silver (Ag)	<.5	NA	<.5	NA
Total Manganese (Mn)	260	1.041	160	.084

TABLE 2 - [illegible]

Outfall	[illegible]	[illegible]
Matrix	Water	Water
Date Collected	[illegible]/18/86	[illegible]
Time Collected	[illegible]	[illegible]
Temperature (F)	56	56
pH (S.U.)	7.9	3.1
Chlorine (Cl)	U	U
Suspended Solids (mg/l)	2000	
Dissolved Solids (mg/l)	[illegible]700	
Dissolved Oxygen (mg/l)	INT	INT
BOD-5 (mg/l)	400	
NO3 + NO2 (mg/l)	1 DM	
NH3 (mg/l)	1.6 DM	
Kjeldahl Nitrogen (mg/l)	45	
Total Phosphorus (mg/l)	4 DS	
Alkalinity (as CaCO3)	3226	
Hardness (as CaCO3)	365	
Calcium (mg/l)	99	
Potassium (mg/l)	89	
Chloride (mg/l)	200	
Sulfate (mg/l)	280	
Magnesium (mg/l)	29	
Sodium (mg/l)	1700	
Oil & Grease (grav) (mg/l)	3.3	3.1
Ortho Phosphate (mg/l)	.07 HT,DM	
	ug/l	
Phenols	520	
Total Cadmium (Cd)	<20	
Total Chromium (Cr)	<50	
Total Copper (Cu)	130	
Total Nickel (Ni)	<50	
Total Lead (Pb)	<50	
Total Zinc (Zn)	250	
Manganese (Mn)	1300	
Total Aluminium (Al)	10000	
Total Iron (Fe)	3400	

TABLE 1 - [illegible]

Detail	[illegible]	[illegible]	[illegible]
Interim	[illegible]	[illegible]	
Date Collected	04.16.93	[illegible]	[illegible]
Time Collected	[illegible]	[illegible]	[illegible]
Temperature (F)	80	64	66
pH (S.U.)	7.4	7.8	7.3
Chlorine (Cl)	U	U	U
Suspended Solids (mg/l)	<4	16	
Dissolved Solids (mg/l)	310	360	
Dissolved Oxygen (mg/l)	1.5	9	9.8
COD (mg/l)	<3		
TOC (mg/l)	1.1		
Alkalinity (as CaCO3)	201		
Hardness (as CaCO3)	225		
Calcium (mg/l)	58		
Potassium (mg/l)	1.8		
Chloride (mg/l)	39		
Sulfate (mg/l)	26		
Magnesium (mg/l)	19		
Sodium (mg/l)	25		
Oil & Grease (grav) (mg/l)	<2	2.6	5.8
Conductivity (umho/cm)	553		
	ug/l		
Total Cadmium (Cd)	<20		
Total Chromium (Cr)	<50		
Total Copper (Cu)	<20		
Total Nickel (Ni)	<50		
Total Lead (Pb)	<50		
Total Zinc (Zn)	<50		
Manganese (Mn)	35		
Total Aluminium (Al)	75		
Total Iron (Fe)	190		

Menasha

TABLE 2 - Analyses of Grab Samples

Outfall	030134 (002)	030134 (002)
Matrix	water	water
Date Collected	04/18/88	04/18/88
Time Collected	1015	2015
Temperature (F)	80	78
pH (S.U.)	8.1	8.1
Chlorine (Cl)	U	U
Suspended Solids (mg/l)	88	
Dissolved Solids (mg/l)	710	
Dissolved Oxygen (mg/l)	3	3.8
BOD-5 (mg/l)	100	
NO3 + NO2 (mg/l)	<.1 DM	
NH3 (mg/l)	<.1 DM	
Kjeldahl Nitrogen (mg/l)	2.3	
Total Phosphorus (mg/l)	.82	
Ortho Phosphate (mg/l)	.1 DM	
Alkalinity (as CaCO3)	396	
Hardness (as CaCO3)	300	
Calcium (mg/l)	75	
Potassium (mg/l)	4.3	
Chloride (mg/l)	35	
Sulfate (mg/l)	58	
Magnesium (mg/l)	28	
Sodium (mg/l)	97	
Oil & Grease (grav) (mg/l)	2.6	2.2
	ug/l	
Phenols	1300	
Total Cadmium (Cd)	<20	
Total Chromium (Cr)	<50	
Total Copper (Cu)	<20	
Total Nickel (Ni)	<50	
Total Lead (Pb)	<50	
Total Zinc (Zn)	<50	
Total Manganese (Mn)	250	
Total Aluminium (Al)	500	
Total Iron (Fe)	1200	

[illegible]

TABLE 2 - Analy[illegible]

Outfall	[illegible] Pit	[illegible]	[illegible]
Matrix	water	water	water
Date Collected	[illegible]/18/88	04/18/88	[illegible]
Time Collected	1000	1100	[illegible]
Temperature (F)		59	62
pH (S.U.)		7.5	7.5
Chlorine (Cl)		U	U
Suspended Solids (mg/l)	4300	<4	
Dissolved Solids (mg/l)	10000	520	
Dissolved Oxygen (mg/l)		6.6	6.6
BOD-5 (mg/l)	6600 DR		
Oil & Grease (grav) (mg/l)		4.2	12

SLS 3

Outfall	[illegible]	[illegible]
Matrix	Water	Water
Sample Type	Grab	Grab
Date & Time Collected	[illegible]	[illegible]

Scan 1-Purgeable Halocarbons				
Dilution Factor		25		25
		ug/l		ug/l
Trichlorofluoromethane	<	125	<	125
Vinyl chloride	<	125	<	125
Bromomethane	<	125	<	125
Chloroethane	<	125	<	125
Bromodichloromethane	<	25	<	25
Bromoform	<	25	<	25
Carbon Tetrachloride	<	25	<	25
Chlorobenzene	<	125	<	125
Chloroform	<	25	<	25
Dibromochloromethane	<	25	<	25
1,1-Dichloroethane	<	25	<	25
1,2-Dichloroethane	<	25	<	25
1,1-Dichloroethene	<	25	<	25
trans-1,2-Dichloroethene	<	25	<	25
cis-1,2-Dichloroethene	<	25	<	25
1,2-Dichloropropane	<	25	<	25
trans-1,3-Dichloropropene	<	25	<	25
cis-1,3-Dichloropropene	<	25	<	25
Methylene chloride	<	125	<	125
1,1,2,2-Tetrachloroethane	<	25	<	25
Tetrachloroethene	<	25	<	25
1,1,1-Trichloroethane	<	25	<	25
1,1,2-Trichloroethane	<	25	<	25
Trichloroethene	<	25	<	25

Scan 2 - Purgeable Aromatic Hydrocarbons				
Dilution factor		10		10
		ug/l		ug/l
Benzene	<	50	<	50
Ethylbenzene	<	50	<	50
Toluene	<	50	<	50
Xylene isomers (o, m, and p)	<	50	<	50

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TABLE 3

Outfall	000103 (001)	000035 (004)
Matrix	water	water
Sample Type	grab	grab
Date & Time Collected	04/13/88 1145	04/13/88 1100
Scan 1-Purgeable Halocarbons		
Dilution Factor	1	1
	ug/l	ug/l
Trichlorofluoromethane	< 5	< 5
Vinyl chloride	< 5	< 5
Bromomethane	< 5	< 5
Chloroethane	< 5	< 5
Bromodichloromethane	< 1	< 1
Bromoform	< 1	< 1
Carbon Tetrachloride	< 1	< 1
Chlorobenzene	< 5	< 5
Chloroform	< 1	< 1
Dibromochloromethane	< 1	< 1
1,1-Dichloroethane	< 1	< 1
1,2-Dichloroethane	< 1	< 1
1,1-Dichloroethene	< 1	< 1
trans-1,2-Dichloroethene	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1
1,2-Dichloropropane	< 1	< 1
trans-1,3-Dichloropropene	< 1	< 1
cis-1,3-Dichloropropene	< 1	< 1
Methylene chloride	< 5	< 5
1,1,2,2-Tetrachloroethane	< 1	< 1
Tetrachloroethene	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1
1,1,2-Trichloroethane	< 1	< 1
Trichloroethene	< 1	1.4 UC
Scan 2 - Purgeable Aromatic Hydrocarbons		
Dilution factor	1	1
	ug/l	ug/l
Benzene	< 5	< 5
Ethylbenzene	< 5	< 5
Toluene	< 5	< 5
Xylene isomers (o, m, and p)	< 5	< 5

[illegible]

TABLE 3

Outfall	030134 (002	030134 (002)
Matrix	water	water
Sample Type	grab	grab
Date & Time Collected	04/18/88 [illegible]	04/18/88 [illegible]
Scan 1-Purgeable Halocarbons		
Dilution Factor	10	10
	ug/l	ug/l
Trichlorofluoromethane	< 50	< 50
Vinyl chloride	< 50	< 50
Bromomethane	< 50	< 50
Chloroethane	< 50	< 50
Bromodichloromethane	< 10	< 10
Bromoform	< 10	< 10
Carbon Tetrachloride	< 10	< 10
Chlorobenzene	< 50	< 50
Chloroform	< 10	< 10
Dibromochloromethane	< 10	< 10
1,1-Dichloroethane	< 10	< 10
1,2-Dichloroethane	< 10	< 10
1,1-Dichloroethene	< 10	< 10
trans-1,2-Dichloroethene	< 10	< 10
cis-1,2-Dichloroethene	< 10	< 10
1,2-Dichloropropane	< 10	< 10
trans-1,3-Dichloropropene	< 10	< 10
cis-1,3-Dichloropropene	< 10	< 10
Methylene chloride	< 50	< 50
1,1,2,2-Tetrachloroethane	< 10	< 10
Tetrachloroethene	< 10	< 10
1,1,1-Trichloroethane	< 10	< 10
1,1,2-Trichloroethane	< 10	< 10
Trichloroethene	< 10	< 10
Scan 2 - Purgeable Aromatic Hydrocarbons		
Dilution factor	5	2
	ug/l	ug/l
Benzene	< 25	< 10
Ethylbenzene	< 25	< 10
Toluene	< 25	< 10
Xylene isomers (o, m, and p)	< 25	< 10

BLE 3

Scan 3-Chlorinated		[illegible]		[illegible]
Outfall		[illegible]		[illegible]
Matrix		Water		Water
Sample Type		Composite		Grab
Survey Period	from	[illegible]		[illegible]
	to	[illegible]		
Dilution Factor		1		1
		ug/l		ug/l
Aldrin	<	.01	<	.01
*Aroclor 1016	<	.05	<	.05
*Aroclor 1221	<	.05	<	.05
*Aroclor 1232	<	.05	<	.05
Aroclor 1242	<	.05	<	.05
*Aroclor 1248	<	.05	<	.05
Aroclor 1254	<	.05	<	.05
Aroclor 1260	<	.05	<	.05
*Aroclor 1262	<	.05	<	.05
*Aroclor 1268	<	.05	<	.05
a-BHC	<	.01	<	.01
b-BHC	<	.01	<	.01
d-BHC	<	.01	<	.01
[illegible]BHC (lindane)	<	.01	<	.01
[illegible]P-6 (PBB)	<	.05	<	.05
[illegible]-Chlordane	<	.01	<	.01
g-Chlordane	<	.01	<	.01
2-Chloronaphthalene	<	.2	<	.2
4,4'-DDD	<	.01	<	.01
4,4'-DDE	<	.01	<	.01
1,4'-DDT	<	.01	<	.01
4,4'-DDT	<	.01	<	.01
1,2-Dichlorobenzene	<	.1	<	.1
1,3-Dichlorobenzene	<	.1	<	.1
1,4-Dichlorobenzene	<	.1	<	.1
Dieldrin	<	.01	<	.01
Endosulfan I	<	.01	<	.01
Endrin	<	.01	<	.01
Heptachlor	<	.01	<	.01
Heptachlor epoxide	<	.01	<	.01
Hexabromobenzene	<	.01	<	.01
Hexachlorobenzene	<	.01	<	.01
Hexachlorobutadiene	<	.01	<	.01
Hexachlorocyclopentadiene	<	.01	<	.01
Hexachloroethane	<	.01	<	.01
Methoxychlor	<	.01	<	.01
Mirex	<	.01	<	.01
Pentachlorobenzene	<	.01	<	.01
[illegible]entachloronitrobenzene	<	.01	<	.01
[illegible],2,3,4-Tetrachorobenzene	<	.01	<	.01
[illegible],2,4,5-Tetrachlorobenzene	<	.01	<	.01
*Toxaphene	<	.05	<	.05
1,2,3-Trichlorobenzene	<	.01	<	.01
1,4,4-Trichlorobenzene	<	.01	<	.01
1,3,5-Trichlorobenzene	<	.01	<	.01

BLE 3 Menasha

Scan 3-Chlorinated Hydrocarbons, PCBs & Organochlorine Pesticides

Outfall		030134 (002)		030055 (004)	
Matrix		water		water	
Sample Type		composite		composite	
Survey Period	from	04/18/88 1000		04/18/88 1045	
	to	04/19/88 1000		04/19/88 1045	
Dilution Factor		1		1	
		ug/l		ug/l	
Aldrin	<	.01	<	.01	
*Aroclor 1016	<	.05	<	.05	
*Aroclor 1221	<	.05	<	.05	
*Aroclor 1232	<	.05	<	.05	
Aroclor 1242	<	.05	<	.05	
*Aroclor 1248	<	.05	<	.05	
Aroclor 1254	<	.05	<	.05	
Aroclor 1260	<	.05	<	.05	
*Aroclor 1262	<	.05	<	.05	
*Aroclor 1268	<	.05	<	.05	
a-BHC	<	.01	<	.01	
b-BHC	<	.01	<	.01	
d-BHC	<	.01	<	.01	
g-BHC (lindane)	<	.01	<	.01	
-6 (PBB)	<	.05	<	.05	
-Chlordane	<	.01	<	.01	
g-Chlordane	<	.01	<	.01	
2-Chloronaphthalene	<	.2	<	.2	
4,4'-DDD	<	.01	<	.01	
4,4'-DDE	<	.01	<	.01	
1,4'-DDT	<	.01	<	.01	
4,4'-DDT	<	.01	<	.01	
1,2-Dichlorobenzene	<	.1	<	.1	
1,3-Dichlorobenzene	<	.1	<	.1	
1,4-Dichlorobenzene	<	.1	<	.1	
Dieldrin	<	.01	<	.01	
Endosulfan I	<	.01	<	.01	
Endrin	<	.01	<	.01	
Heptachlor	<	.01	<	.01	
Heptachlor epoxide	<	.01	<	.01	
Hexabromobenzene	<	.01	<	.01	
Hexachlorobenzene	<	.01	<	.01	
Hexachlorobutadiene	<	.01	<	.01	
Hexachlorocyclopentadiene	<	.01	<	.01	
Hexachloroethane	<	.01	<	.01	
Methoxychlor	<	.01	<	.01	
Mirex	<	.01	<	.01	
Pentachlorobenzene	<	.01	<	.01	
Pentachloronitrobenzene	<	.01	<	.01	
2,3,4-Tetrachorobenzene	<	.01	<	.01	
,2,4,5-Tetrachlorobenzene	<	.01	<	.01	
*Toxaphene	<	.05	<	.05	
1,2,3-Trichlorobenzene	<	.01	<	.01	
1,4,4-Trichlorobenzene	<	.01	<	.01	
1,3,5-Trichlorobenzene	<	.01	<	.01	

* Seldomly encountered, reported semi-quantitatively

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Comparison of survey results with the facility's NPDES Permit and Discharge Monitoring Report.

Effluent Parameter (unit)	Final Effluent Limitations 30-day Avg.	7-day Avg.	Daily Min.	Daily Max.	April Discharge Monitoring Report Monthly Average	Monthly Maximum	7-day Average	04/18/88	04/19/88	Survey Results Composite	(grab)
Outfall 030171 (000)											
Flow (MGD)					.411	.768		.392	.368	.4	
Ortho-phos. (Sol.) (mg/l)										.07	(.07)
Ortho-phos. (Sol.)(lbs/day)	8				.3	.37				0	
BOD-5 (mg/l)					518	1020		542	492	360	(400)
BOD-5 (lbs/day)										1201	
Susp. Solids (mg/l)					754	1080		720	780	1900	(2000)
Susp. Solids (lbs/day)										6338	
pH (S.U.)			6	9	MIN 7.9	8.4		8.1	8.1		(7.9,8.1,8.2)
Outfall 030134 (002)											
Flow (MGD)					.459	.548		.464	.444	.48	
BOD-5 (mg/l)					60	252		72	69	99	(100)
BOD-5 (lbs/day)					236	1076		279	256	396	
Susp. Solids (mg/l)					34	76		28	43	100	(88)
Susp. Solids (lbs/day)					133	324		108	195	400	
pH (S.U.)			6	9	MIN 8	8.2		8.1	8.2		(8.1,8.1,8.2)
Outfalls (000)+(002) comb.											
BOD-5 (lbs/day)	3345			6261	2077	5385		2069	1766	1597	
Susp. Solids (lbs/day)	3584			5376	2741	5019		2462	2589	6738	
Outfall 030138 (001)											
Flow (MGD)					.213	.258		.196	.216		
pH (S.U.)			6	9	MIN 7.3	7.4			7.3		(7.4)
Outfall 030055 (004)											
Flow (MGD)					.062	.078		.058	.068	.063	
Susp. Solids (mg/l)	20			50	0	1		0		<4	(<4)
Susp. Solids (lbs/day)	39			96	0	1		0		<2	
pH (S.U.)			6	9	MIN 7.6	7.8		7.8			(7.5,7.5)

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.ble 5

Comparison of the laboratory analytical results obtained by the facility and the MDNR Environmental Laboratory from [illegible] split samples.

Outfall	030171 (000)		030134 (002)	
Sample type	grab		grab	
Date & Time collected	04/18/88 1040		04/18/88 1015	
Parameter (unit)	facility results	MDNR results	facility results	MDNR results
BOD-5 (mg/l)	578	400	126	100
Suspended Solids (mg/l)	760	2000	46	88

Outfall	030055 (004)	
Sample type	grab	
Date & Time collected	04/18/88 1100	
Parameter (unit)	facility results	MDNR results
Suspended Solids (mg/l)	<.01	<4

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Table 7 - Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2)
Phenols (Chlorine Present)	Dechlorinate w/ferrous ammonium sulphate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4 to pH <2.
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l, 10 drops 10 N NaOH (to pH >12)/250 ml.
Dissolved Oxygen(D.O.)	Fixed on site.
Total Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3/250 ml (to pH <2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml to dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2)
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10 N NaOH to pH 9/250 ml.
Base-neutral & Acid Extractables	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Purgeable Organics	5 drops conc. HCl (to pH <2)

Samples preserved as required, cooled to 4 degrees Centigrade with chain of custody maintained.

Lab Letter Codes

DM Sample was diluted to reduce possible matrix interference.

DR High sample dilution was required to bring into the analytical working range.

DS Sample was diluted due to other high values on a multi-channel analytical system.

T The recommended maximum laboratory holding time was exceeded before analysis.

Menasha

Lab Letter Codes cont.

INT Interference encountered during analysis resulted in no obtainable value.

U Indicates material was analyzed for but not detected.

Survey by: Brock F. Howard, Engineer
Chris C. Little, Water Quality Technician
Joseph W. Hey, Water Quality Technician

Contact with Management: Kieth Kling

Laboratory Analyses by: MDNR Environmental Laboratory

Report by: Joseph W. Hey
Chris C. Little
Grand Rapids District Office
Surface Water Quality Division
Michigan Department of Natural Resources

MEN01564

MENASHA CORPORATION

PAPERBOARD GROUP

October 26, 1988

Mr. John Bantjes
Department of Natural Resources
District 12 Headquarters
P.O. Box 355
Plainwell, MI. 49080

Dear John,

During our most recent Compliance Sampling Inspection (CSI) on April 18-19, 1988 a significant difference in the suspended solids test results was noted between our lab and the MDNR lab. This has been a continual problem and has been addressed in letters to the MDNR on 11/19/79, 2/13/81, 8/20/82 and 6/5/84. The problem is related to the amount of washing done on the suspended solids sample. Our effluent contains a high concentration of dissolved solids and the suspended solids form a slimy layer on the pad. These problems make washing of the pad difficult. We frequently find that people who are not used to running suspended solids on our effluent do not wash it sufficiently to remove all the dissolved solids. In addition to this, at the time of the inspection we were using a polymer to improve clarity of the effluent. This compounds the problem of washing the sample. Standard method states "For samples high in dissolved solids thoroughly wash the filter to ensure removal of dissolved material". During the testing from the 1984 CSI, the MDNR lab results were similar to ours when they used twice their normal amount of wash water.

A problem was also noted with our BOD test result being somewhat higher than those of the MDNR lab. By its nature the BOD test results have some variability in results. For this reason we run from 3 to 5 dilutions each day on each of our waste streams which require testing. Long term comparison of these dilutions shows that our testing repeatability is very good. The most likely cause for a lower test result by the MDNR lab is the length of time between collection and testing. It states in Standard Methods "When samples are to be used for regulatory purposes make every effort to deliver samples for analysis within 6 hours of collection".

Menasha is a participant in the EPA DMR-QA Study program. In the annual tests which have been run for the past 8 years our lab has always been well within the acceptable range on these tests.

OTSEGO MILL BOX 155 • 320 N FARMER STREET • OTSEGO MICHIGAN 49078 • PHONE 616-692-6141

All of our test procedures have been taken directly from the 1986 Laboratory Training Manual for Wastewater Treatment Plant Operations which was prepared by the MDNR.

I believe that our lab techniques are accurate and repeatable and that no actions are necessary to resolve the discrepancies in these numbers.

Please contact me if you have further questions or concerns.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith B. Kling
Environmental Supervisor

cc: John Bonham
John Blauwkamp

MEN01566

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
MARLENE J FLUHARTY
KERRY KAMMER
O STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE

JAMES J BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

DAVID F HALES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

June 2, 1989

Keith Kling, Environmental Supervisor
Menasha Corporation, Otsego Mill
320 N. Farmer Street
Otsego, Michigan 49078

Dear Mr. Kling

SUBJECT: Compliance Evaluation Inspection (CEI)

On June 1, 1989 I conducted a CEI at the Otsego Mill of Menasha Corporation. The object of the CEI was to verify that the conditions of the NPDES permit are complied with.

The facility is as described in the permit. However, the surge pond has been eliminated and the clarified water is now pumped to the treatment ponds.

Review of the records kept by the facility indicated that the record keeping requirements of the permit are met in essence. Records include the type, date, and location of sampling. The names of the samplers and analysts are recorded. However, the time of sampling is taken to be standard and is not recorded routinely. The permit requires that the time of sampling is recorded.

A contingency plan for treatment upsets, power failures, floods, etc. should be developed.

Enclosed for your information is a copy of the report form used for computer entry, as well as a copy of the checklist completed during the CEI.

Should you have any questions in this matter, please contact me at this office.

Sincerely,

SURFACE WATER QUALITY DIVISION

John M. Bantjes
Plainwell District
616-685-9386

R 1026-1
5/88

MEN01567

EPA

United States Environmental Protection Agency
Washington, D. C. 20460

NPDES Compliance Inspection Report

Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

Section A: National Data System Coding

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N 2 5	3 M 0 0 3 7 2 4 11	12 8 9 0 6 0 1 17	18 C	19 S	20 Z

Remarks

21 66

Reserved	Facility Evaluation Rating	BI	QA	Reserved
67 69	70 5	71 N	72 N	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected	Entry Time	Permit Effective Date
MENASHA CORPORATION 320 NORTH FARMER STREET OTSEGO, MI 49078	☐ AM ☐ PM 12:30	5-21-85
	Exit Time/Date 4:00PM / 6-1-89	Permit Expiration Date 5-31-90

Name(s) of On-Site Representative(s)	Title(s)	Phone No(s)
KEITH KLING	ENVIRONMENTAL SUPERVISOR	(616)
AL SWITZENBERG	LABORATORY TECHNICIAN	692-6141

Name, Address of Responsible Official	Title	
	Phone No.	Contacted ☐ Yes ☐ No

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	N	Flow Measurement	N	Pretreatment	S	Operations & Maintenance
S	Records/Reports	S	Laboratory	S	Compliance Schedules	N	Sludge Disposal
S	Facility Site Review	S	Effluent/Receiving Waters	S	Self-Monitoring Program		Other:

Section D: Summary of Findings/Comments *(Attach additional sheets if necessary)*

ANNUAL CEI - cf CHECKLIST
RECORD KEEPING IS CONCISE. HOWEVER, INFORMATION SUCH AS TIME OF SAMPLING AND NAME OF ANALYST IS NOT EXPLICIT.

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Telephone	Date
JOHN BANTJES	MDNR / PLAINWELL (616) 685-9886	6-2-89
Signature of Reviewer	Agency/Office	Date

Regulatory Office Use Only

Action Taken	Date	Compliance Status
		☐ Noncompliance ☐ Compliance

Facility Menasha Corp

Permit No. M1 0003824

SECTION A. PERMIT VERIFICATION

YES NO N/A INSPECTION OBSERVATIONS VERIFY INFORMATION CONTAINED IN PERMIT

Yes No N/A 1. Correct name and mailing address of permittee.

Yes No N/A 2. Facility is as described in permit.

Yes No N/A 3. Notification has been given to EPA/State of new, different, increased discharges.

Yes No N/A 4. Accurate records of influent volume and concentrations are maintained, when appropriate (i.e., net loadings, % removed requirements)

Yes No N/A 5. Number and location of discharge points are as described in the permit.

Yes No N/A 6. Name and location of receiving waters are correct.

Yes No N/A 7. Facility listed as non-compliant on last QNCR. Reason for non-compliance _____.

8. Permit expiration date 5-31-1990

9. Permit scheduled for reissuance No.

10. List dates of noncompliance letters submitted by this facility last three months N.A.

11. Facility classification A-1b, A-2f, C-1b.

12. Chief operator certification A-1b, A-1f, A-2f, C-1b.

13. Describe any discrepancies with permit.

Section A. Completed by: John Bantier Date 6-1-89

Facility Menasha Corp

Permit No. MI 0003824

SECTION B. RECORDKEEPING AND REPORTING EVALUATION

(YES) NO N/A RECORDS AND REPORTS ARE MAINTAINED AS REQUIRED BY PERMIT

(Yes) No N/A 1. All Required information is available, complete, and current.

(Yes) No N/A 2. Information is maintained for at least three years.

(Yes) No N/A 3. Analytical results are consistent with the data reported on the MORs. (Suggestion: Check at least past 3 months, 5 data points per month)

4. Sampling and Analyses Data are adequate and include:

(Yes) No N/A a. Dates, times, frequency, location of sampling

(Yes) No N/A b. Name of individual performing sampling

(Yes) No N/A c. Results of analyses

(Yes) No N/A d. Dates of analyses

(Yes) No N/A e. Name of person performing analyses.

5. Monitoring records are adequate and include:

(Yes) No N/A a. Flow, pH, D.O., etc. as required by permit.

(Yes) No N/A b. Strip or circular charts are kept for a minimum of three years.

(Yes) No N/A 6. Laboratory equipment calibration and maintenance records are adequate. (see also Section G)

7. Plant Operation & Maintenance Records are adequate* and include: (see also Section I)

(Yes) No N/A a. O & M Manual

(Yes) No N/A b. "As-built" engineering drawings of wastewater treatment units.

(Yes) No N/A c. Schedules and dates of equipment maintenance and repairs

(Yes) No N/A d. Equipment supplies manual

Yes No N/A 8. SPCC/PIPP required?

Yes No N/A a. Available for inspection?

Yes No N/A b. Is PIPP approved and on file with DNR?

c. Date of last revision [illegible]

*Required for facilities built with Federal construction grant funds or by permit.

Section B. completed by: John Rantes Date 6-1-94

MEN01571

Facility Menasha Corp

Permit No. MI 0000 3824

SECTION C. FACILITY SITE REVIEW

Yes No N/A 1. Facility handles and disposes of sludge according to applicable Federal, State, and local regulations.

Yes No N/A 2. All treatment units, other than backup units, are in service. If no, which units are not in service _____.

Yes No N/A 3. Operating schedules are established.
No. of shifts in operation 3 (industrial)
No. of shifts waste treatment in operation 3.
No. of shifts waste treatment system is staffed 3.

Yes No N/A 4. Any bypassing since last inspection. If yes, give date of bypass _____ and date of notification to DNR _____.

Yes No N/A 5. Hydraulic and/or organic overloads are experienced. If yes, give reasons. Are these due to infiltration/inflow, combined sewage, pump sizing?

_____

_____

_____

6. Facility flow rates:

Municipality
Previous year's average daily rate _____ MGD
Historical peak dry weather rate _____ MGD
Historical peak wet weather rate _____ MGD

Industry

Average Flow Rates

	Process Water	Non-Contact Cooling Water	Sanitary	Total
Outfall #000	0.56 MGD	0	0	0.56 MGD
Outfall #004		5.7 MGD	0	5.7
Outfall #001		0.2 MGD	0	0.2
Outfall #002	0.45 MGD		0	.45
Outfall #004	0.055		0	0.055

Yes No N/A 7. Flow measurement devices are properly installed and maintained.

Yes No N/A 8. Flow is measured at proper locations.

Yes No N/A a. Influent flow is measured before all return lines.

Yes No N/A b. Effluent flow is measured after all return lines.

9. For municipality: Population currently served _____.
For industry: Number of employees currently working_____.

10. Water supply, wastewater treatment - list any changes from most recent inspection and CSI.

11. Manufacturing operations which contribute wastewater (Industrial inspection only) - list any changes from most recent inspection.

SURGE POND WAS ELIMINATED.

Yes No N/A 12. Any citizen complaints or PEAS reports received since last inspection? If yes, list date and nature of complaint.

Section C. completed by: [illegible] Date [illegible]

MEN01573

Facility Menasha Corp

Permit No. MI [illegible]

SECTION D. COMPLIANCE SCHEDULE STATUS REVIEW

YES NO N/A THE PERMITTEE IS MEETING THE COMPLIANCE SCHEDULE FOR CONSTRUCTION ACTIVITIES

YES NO N/A THE PERMITTEE IS MEETING THE COMPLIANCE SCHEDULE FOR PERMIT CONDITIONS

Yes No N/A 1. The permittee has obtained necessary approvals to begin construction.

Yes No N/A 2. Financing arrangements are complete.

Yes No N/A 3. Contracts for engineering services have been executed.

Yes No N/A 4. Design plans and specifications have been completed.

Yes No N/A 5. Construction has begun.

Yes No N/A 6. Construction is on schedule.

Yes No N/A 7. Equipment acquisition is on schedule.

Yes No N/A 8. Construction has been completed.

Yes No N/A 9. Start-up has begun.

Yes No N/A 10. The permittee has requested an extension of time.

11. Other permit schedule items:

	Due	Submitted	Approved
Toxic Substance Monitoring Report			
Program for Effective Residual Management			
Demonstration Study			
Short Term Wastewater Quality Study	8-31-85	8-12-85	2-6-86
Bioassay			
Other: D.C. Study	2-28-87	10-20-86	3-5-86
Chlorine Study			
Alternate Power Source Report			

Section D. completed by: [illegible] Date [illegible]

Facility [illegible]
Permit No. [illegible]

SECTION I. (INDUSTRIAL) OPERATION AND MAINTENANCE FOR INDUSTRIAL WASTE WATER TREATMENT PLANTS

1. Type of water sent to waste treatment unit.
   a. Process [✓] Boiler Blow Down [ ] Non Contact [ ]
      Storm Water [ ] Contact Cooling [✓] Other [ ]
   b. Short description of industry operation: (use back if necessary)
      (i) Raw materials used Wood Pulp & Recycled Boxes
      (ii) Critical materials used
      (iii) Product Corrugating Medium (Paper).
      (iv) Has industry made changes in production processes or water usage since last inspection? No Change (Production Increase)

2. Date present waste water treatment plant began operating.

   1970

3. Flow diagram of treatment unit, if changed since last inspection.

4. Provide current flow diagram.

5. Receiving waters Kalamazoo River

6. Flows
   a. Current plant discharge 7.5 MGD.
      (i) Treated process water 1.2 MGD.
      (ii) Non contact cooling water 6.0 MGD.
      (iii) Contact cooling water 0 MGD.
      (iv) Boiler blow down .01 MGD.
      (v) Storm water 0.2 MGD.
      (vi) Sanitary 0 MGD.
      (vii) Which of the above are discharged to the municipal waste water system? _____
   b. Permit limits
      (i) Treated process water 0.92 MGD.
      (ii) Non contact cooling water 6.955 MGD.
      (iii) Contact cooling water _____ MGD.
      (iv) Boiler blow down _____ MGD.
      (v) Storm water _____ MGD.
   c. Annual average daily rate 7.5 MGD.
   Yes (No) N/A d. Hydraulic and/or organic overloads experienced.

7. Pump stations
   a. How many 2
   b. Locations 1. TO POND Design Flow 1800 GPM Actual Flow 420 GPM.
      2. TO CLARIFIER Design Flow 2 MGD Actual Flow 0.6 MGD.
      3. _____ Design Flow _____ Actual Flow _____

(Yes) No N/A 8. Adequate alarm system for power or equipment failure exists.

Yes No (N/A) 9. Standby power or other equivalent provision provided.

Yes No (N/A) 10. Written procedures for facility operation and maintenance readily available.
Yes No (N/A) a. Are the above procedures current?
b. Procedures include:
Yes No (N/A) (i) Operating report
Yes No (N/A) (ii) Work schedule
Yes No (N/A) (iii) Activity report

(Yes) No N/A 11. Maintenance tasks are performed on time.

(Yes) No N/A 12. Adequate time is allowed for preventive maintenance.

(Yes) No N/A 13. Up to date records are kept of maintenance repairs and replacements, maintenance costs.

(Yes) No N/A 14. An inventory is kept of spare parts.

Yes No N/A 15. As built drawings, shop drawings, construction specifications, major equipment specifications are readily available.

(Yes) No N/A 16. Operation and maintenance manual available.

(Yes) No N/A 17. Adequate numbers of qualified operators on hand to operate the waste treatment system.
[illegible] hours each day PLUS ON CALL [illegible]

7 days a week

18. Facility classification A-1 G, A-2 J, C-1 G

19. Chief operator's level of certification A-1 G, A-2 J, A-3 J, C-1 G

Yes No N/A 20. Established procedures available for training new operators.
ON-THE-JOB-TRAINING

Yes No N/A 21. Does a contingency plan for treatment upsets, power failures, floods, etc., exist?

Yes No N/A a. Is plan known and available to all shifts?

Yes No N/A b. Is plan explained to new employees?

Yes No N/A 22. Does the industry have a pollution incident prevention plan approved by the DNR?

Yes No N/A 23. Any problems in operation of chemical feed systems? If yes, explain _____

GENERAL OBSERVATIONS DURING WALK THROUGH

1. Any odors in: (if yes, explain)

Yes No N/A a. Wet wells

Yes No N/A b. Around aerobic and anaerobic biological units.

Yes No N/A c. Pits

Yes No N/A d. Sludge handling facilities

Yes No N/A e. Treatment tanks

Yes No N/A f. Any odor complaints beyond property?

g. How was complaint handled?

Yes No N/A 2. Evidence of surcharging of influent lines, overflow weirs, and/or other structures? If yes, explain.

Yes No N/A 3. Accumulation of solids and grease in wet wells.

Yes No N/A 4. Excessive build up of grease, foam, or floating material in clarifiers. If yes, explain.

Yes No N/A 5. Any discoloration puddles, grit, oil on ground around units. If yes, explain.

Yes No N/A 6. Are there excessive suspended solids, turbidity, foam, grease, scum, unusual color in plant effluent?

Yes No N/A 7. Any treatment units currently out of service?

a. What unit(s)? _____

b. How long out of service _____

c. Type of failure _____

Yes No N/A d. Dated tag _____

e. When will it be back in service _____

Yes No N/A 8. Any "jury-rigged" systems to correct operational problems. If yes, explain _____

Menasha

Survey by: C. E. Mogg, Environmental Quality Analyst
Chris C. Little, Water Quality Technician
Joseph W. Hey, Water Quality Technician

Contact with Management: Kieth Kling

Laboratory Analyses by: MDNR Environmental Laboratory

Report by: Joseph W. Hey
Chris C. Little
Grand Rapids District Office
Surface Water Quality Division
Michigan Department of Natural Resources

MEN01578

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
HARRY DEVUYST
PAUL EISELE
GORDON E. GUYER
JAMES P. HILL
DAVID HOLLI
O. STEWART MYERS
JOEY M. SPANO

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

December 8, 1992

Mr. Keith B. Kling, Environmental Supervisor
Menasha Corporation, Paperboard Division
320 North Farmer Street
Otsego, Michigan 49078-0155

Dear Mr. Kling:

SUBJECT: August 24, 1992 Compliance Sampling Inspection

Enclosed please find the analytical report for the referenced inspection. Also enclosed is the inspection report completed during our meeting of October 8, 1992. The following issues should be addressed by Menasha.

Laboratory QA/QC

1. We recommend that permanent logs be maintained for each piece of equipment. Calibration and maintenance activities should be maintained in these logs.

2. Written procedures for each laboratory analysis should be maintained in the lab. Also, written procedures for laboratory QA/QC should be developed. Precision and accuracy data should be generated and plotted to confirm the validity of data generated from day to day.

3. We recommend that lab sheets be revised to provide one sheet for each month to help eliminate potential transcription errors and to more clearly show calculation methods.

4. A log should be maintained for reagents to help assure that an adequate supply is on-hand and that expired reagents are properly disposed of.

5. Spill response and cleanup procedures should be maintained in the lab. Also, it was noted during the inspection that no eye wash was available for use in the event of an emergency.

Sample Results

6. Several pollutants were detected in the effluent from the facility that may indicate the need for further monitoring or study. The results have been forwarded to the Great Lakes and Environmental Assessment Section for review. Comments resulting from that review will be forwarded when available.

7. It was also noted during my inspection that the effluent from Menasha does cause discoloration of the Kalamazoo River downstream of the discharge. Menasha should investigate modifications to its treatment process that will minimize this discoloration to the extent practical.

Please provide a written response to this office, no later than January 15, 1993, outlining the actions Menasha will take to address the issues identified in this letter.

Please feel free to contact me if you have any questions.

Sincerely,

Gregory A. Danneffel

Gregory A. Danneffel
Surface Water Quality Division
616-685-9886

GD:clm

cc: CSI Distribution

MEN01580

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Wastewater Survey
Conducted at
Menasha Corporation
All Outfalls No. 030019
NPDES No. MI0003824
Allegan County
Otsego, MI
08/24/92

RECEIVED
DEC 1 1992
SWQD-Plainwell

SURVEY SUMMARY

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, August 24, 1992.

The results of this survey are compared to the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0003824, in Table 4.

The results of this survey are compared to the results reported by the facility in their August Discharge Monitoring Report (DMR) in Table 4.

A grab sample from each outfall was split with the facility to compare laboratory analyses. The results are shown in Table 5.

The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scan analyses are presented in Table 3.

Menasha Corporation

SURVEY PROCEDURE

The flows and samples were obtained as follows:

Sample Location	Flow Measurement	Sampling Methods
030138 (001) Samples collected at company weir.	DMR value.	Submergible composite sampler and individual grab samples.
030053 (003) Samples collected at company weir.	DMR value.	Submergible composite sampler and individual grab samples.

A submergible sampler obtains samples at a continuous rate.

An individual grab is a single instantaneous sample.

Samples were analyzed by the MDNR Environmental Laboratories located in Lansing.

Samples were preserved according to Table 7. The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scans are presented in Table 3. Letter codes for laboratory results are defined in Table 7.

Menasha Corporation

TABLE 1 - Analyses of Composite Samples

Outfall	030138 (001)		030053 (003)		
Survey Period From	08/24/92 0945		08/24/92 1010		
To	08/25/92 0945		08/25/92 1010		
Computed Flow Rate	.1 MGD		1.5 MGD		
	mg/l	lbs/day	mg/l	lbs/day	
Suspended Solids	<4	NA	68	851	
Dissolved Solids	360	300	960	12010	
BOD-5	ACC	NA	22	275	LH
TOC	1.5	1	74	926	
Nitrite	<.01	NA	.01	0	
NO3 + NO2	.33	0	.06	1	DM
NH3	.01	0	<.05	NA	DM
Kjeldahl Nitrogen	.23	0	3.4	43	
Total Phosphorus	.2	0	.89	11	
Ortho Phosphate	.02	0	.35	4	
Total Cyanide	<.005	NA	.011	0	
Amenable Cyanide	FCN	NA	FCN	NA	
Alkalinity (as CaCO3)	217	NA	524	NA	
Conductivity (umho/cm)	572	NA	1228	NA	
Hardness (as CaCO3)	235	NA	215	NA	
Calcium	61	51	56	701	
Chloride	35	29	41	513	
Potassium	1.7	1	15	188	
Magnesium	20	17	18	225	
Sodium	20	17	190	2377	
Sulfate	28	23	81	1013	
Sulfide	<.02	NA	.02	0	PA
	ug/l	lbs/day	ug/l	lbs/day	
Phenolics	<10	NA	200	2.502	
Total Cadmium (Cd)	<.2	NA	.3	.004	
Total Chromium (Cr)	<1	NA	1.8	.023	
Total Copper (Cu)	2	.002	7.3	.091	
Total Lead (Pb)	<1	NA	2.2	.028	
Total Nickel (Ni)	<2	NA	2.4	.030	
Total Zinc (Zn)	<4	NA	24	.300	
Total Iron (Fe)	480	.400	800	10.008	
Total Aluminum (Al)	<50	NA	340	4.253	
Total Mercury (Hg)	<.2	NA	<.2	NA	
Total Selenium (Se)	<1	NA	<1	NA	
Total Arsenic (As)	<1	NA	4.2	.053	
Total Silver (Ag)	<.5	NA	<.5	NA	
Total Molybdenum (Mo)	<25	NA	<25	NA	
Total Antimony (Sb)	<1	NA	4.1	.051	
Hexavalent Chromium (Cr+6)	<5	NA	<5	NA	
Total Barium (Ba)	70	.058	100	1.251	
Total Beryllium (Be)	<1	NA	<1	NA	
Total Cobalt (Co)	<15	NA	<15	NA	
Total Lithium (Li)	<8	NA	9.3	.116	
Total Manganese (Mn)	51	.043	170	2.127	
Total Titanium (Ti)	<15	NA	<15	NA	
Total Vanadium (V)	<10	NA	16	.200	

Menasha Corporation

MEN01583

TABLE 2 - Analyses of Grab Samples

Outfall	030138 (001)	030053 (003)
Matrix	water	water
Date Collected	08/24/92	08/24/92
Time Collected	0950	1015
Temperature (F)	76	81
pH (S.U.)	7.4	7.8
Chlorine (Cl) (mg/l)	<0.01	<0.01
Dissolved Oxygen (mg/l)	2.8	3.8
Suspended Solids (mg/l)	<4	68
Dissolved Solids (mg/l)	380	980
BOD-5 (mg/l)	<2 LH	28 LH
TOC (mg/l)	1.4	85
Nitrite (mg/l)	<.01	.02
NO3 + NO2 (mg/l)	.38	.14 DM
NH3 (mg/l)	.06	.15 DM
Kjeldahl Nitrogen (mg/l)	.17	3.7
Total Phosphorus (mg/l)	.24	1
Ortho Phosphate (mg/l)	.03	.43
Total Cyanide (mg/l)	--	.012
Amenable Cyanide (mg/l)	--	FCN
Alkalinity (as CaCO3)	220	516
Hardness (as CaCO3)	235	215
Conductivity (umho/cm)	580	1294
Calcium (mg/l)	61	56
Potassium (mg/l)	1.6	16
Chloride (mg/l)	36	46
Sulfate (mg/l)	28	83
Magnesium (mg/l)	20	18
Sodium (mg/l)	20	210
Sulfide (mg/l)	--	<.02 PA
Oil & Grease (grav) (mg/l)	<10	INT
	ug/l	ug/l
Phenolics	--	240
Total Cadmium (Cd)	<.2	.4
Total Chromium (Cr)	<1	2.1
Total Copper (Cu)	1.4	8.5
Total Nickel (Ni)	<2	2.7
Total Lead (Pb)	<1	2.2
Total Zinc (Zn)	<4	26
Hexavalent Chromium (Cr+6)	<5	<5
Total Aluminum (Al)	<50	400
Total Arsenic (As)	<1	3.9
Total Iron (Fe)	410	800
Total Mercury (Hg)	<.2	<.2
Total Silver (Ag)	<.5	<.5
Total Selenium (Se)	<1	<1
Total Molybdenum (Mo)	<25	<25
Total Antimony (Sb)	<1	6
Total Barium (Ba)	70	110
Total Beryllium (Be)	<1	<1
Total Cobalt (Co)	<15	<15
Total Lithium (Li)	<8	9.5
Total Manganese (Mn)	58	160
Total Titanium (Ti)	<15	<15
Total Vanadium (V)	<10	16

Menasha Corporation

TABLE 3

Outfall	030138 (001)	030053 (003)
Matrix	water	water
Sample Type	grab	grab
Date & Time Collected	08/24/92 0950	08/24/92 1015
Scan 1-Purgeable Halocarbons		
Dilution Factor	1	1
	ug/l	ug/l
Trichlorofluoromethane	< 5 ND	< 5 ND
Vinyl chloride	< 5 ND	< 5 ND
Bromomethane	< 5 ND	< 5 ND
Chloroethane	< 5 ND	< 5 ND
Bromodichloromethane	3.9	< 1 ND
Bromoform	< 1 ND	< 1 ND
Carbon Tetrachloride	< 1 ND	< 1 ND
Chlorobenzene	< 1 ND	< 1 ND
Chloroform	5.1	< 1 ND
Dibromochloromethane	2.7	< 1 ND
1,1-Dichloroethane	< 1 ND	< 1 ND
1,2-Dichloroethane	< 1 ND	< 1 ND
1,1-Dichloroethene	< 1 ND	< 1 ND
trans-1,2-Dichloroethene	< 1 ND	< 1 ND
cis-1,2-Dichloroethene	< 1 ND	< 1 ND
1,2-Dichloropropane	< 1 ND	< 1 ND
trans-1,3-Dichloropropene	< 1 ND	< 1 ND
cis-1,3-Dichloropropene	< 1 ND	< 1 ND
Methylene chloride	< 5 ND	< 5 ND
1,1,2,2-Tetrachloroethane	< 1 ND	< 1 ND
Tetrachloroethene	< 1 ND	< 1 ND
1,1,1-Trichloroethane	< 1 ND	< 1 ND
1,1,2-Trichloroethane	< 1 ND	< 1 ND
Trichloroethene	< 1 ND	< 1 ND
Scan 2 - Purgeable Aromatic Hydrocarbons		
Dilution factor	1	1
	ug/l	ug/l
Benzene	< 1 ND	< 1 ND
Ethylbenzene	< 1 ND	< 1 ND
Toluene	< 1 ND	< 1 ND
Xylene isomers (o, m, and p)	< 1 ND	< 1 ND

TABLE 3 Menasha Corporation TABLE MEN01585

Scan 3-Chlorinated Hydrocarbons, PCBs & Organochlorine Pesticides

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Survey Period	from	08/24/92 1010
	to	08/25/92 1010
Dilution Factor		1

		ug/l	
Aldrin	<	.01	ND
*Aroclor 1016	<	.1	ND
*Aroclor 1221	<	.1	ND
*Aroclor 1232	<	.1	ND
Aroclor 1242	<	.1	ND
*Aroclor 1248	<	.1	ND
Aroclor 1254	<	.1	ND
Aroclor 1260	<	.1	ND
*Aroclor 1262	<	.1	ND
*Aroclor 1268	<	.1	ND
a-BHC	<	.01	ND
b-BHC	<	.01	ND
d-BHC	<	.01	ND
g-BHC (lindane)	<	.01	ND
BP-6 (PBB)	<	.05	ND
a-Chlordane	<	.01	ND
g-Chlordane	<	.01	ND
2-Chloronaphthalene	<	.2	ND
4,4'-DDD	<	.01	ND
4,4'-DDE	<	.01	ND
1,4'-DDT	<	.01	ND
4,4'-DDT		.011	
1,2-Dichlorobenzene	<	.1	ND
1,3-Dichlorobenzene	<	.2	ND
1,4-Dichlorobenzene	<	2	ND
Dieldrin	<	.01	ND
Endosulfan I	<	.01	ND
Endrin	<	.01	ND
Heptachlor	<	.01	ND
Heptachlor epoxide	<	.01	ND
Hexabromobenzene	<	.01	ND
Hexachlorobenzene	<	.01	ND
Hexachlorobutadiene	<	.01	ND
Hexachlorocyclopentadiene	<	.01	ND
Hexachloroethane	<	.01	ND
Methoxychlor	<	.01	ND
Mirex	<	.04	ND
Pentachlorobenzene	<	.01	ND
Pentachloronitrobenzene	<	.01	ND
1,2,3,4-Tetrachlorobenzene	<	.01	ND
1,2,4,5-Tetrachlorobenzene	<	.01	ND
*Toxaphene	<	.1	ND
1,2,3-Trichlorobenzene	<	.01	ND
1,2,4-Trichlorobenzene		.017	
1,3,5-Trichlorobenzene	<	.01	ND

* Seldomly encountered, reported semi-quantitatively

Menasha Corporation

TABLE 3

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Date & Time Collected	from	08/24/92 1010
	to	08/25/92 1010

Scan 8-Phenols

Dilution factor		1	
		ug/l	
Phenol	<	10	ND
2-Chlorophenol	<	10	ND
o-Cresol	<	10	ND
p-Cresol	<	10	ND
2-Nitrophenol	<	10	ND
2,4-Dimethylphenol	<	10	ND
2,4-Dichlorophenol	<	10	ND
4-Chloro-3-methylphenol	<	10	ND
* 3-Phenylpropionic acid	<	10	ND
2,4,6- Trichlorophenol	<	10	ND
2,4,5-Trichlorophenol	<	10	ND
2,4-Dinitrophenol	<	50	ND
4-Nitrophenol	<	40	ND
2-Methyl-4,6-dinitrophenol	<	40	ND
Pentachlorophenol	<	40	ND

* Seldom encountered, reported semi-quantitatively.

Menasha Corporation

TABLE 3 - Organic Scan List

GC/MS Base/Neutrals

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Date & Time collected		08/24/92 1010 to 08/25/92 1010
Dilution Factor		1
		ug/l
Bis(2-chloroethyl)ether	<	2 ND
1,3-Dichlorobenzene	<	2 ND
1,4-Dichlorobenzene	<	2 ND
1,2-Dichlorobenzene	<	2 ND
Bis(2-chloroisopropyl)ether	<	5 ND
N-Nitroso-di-n-propylamine	<	5 ND
Hexachloroethane	<	5 ND
Nitrobenzene	<	2 ND
Isophorone	<	1 ND
Bis(2-chloroethoxy)methane	<	2 ND
1,2,4-Trichlorbenzene	<	2 ND
Naphthalene	<	1 ND
Hexachlorobutadiene	<	5 ND
Hexachlorocyclopentadiene	<	5 ND
2-Chloronaphalene	<	2 ND
Dimethylphthalate	<	2 ND
Acenaphthylene	<	1 ND
2,6-Dinitrotoluene	<	5 ND
Acenaphthene	<	2 ND
2,4-Dinitrotoluene	<	5 ND
Fluorene	<	2 ND
Diethylphthalate	<	2 ND
4-Chlorodiphenyl ether	<	5 ND
N-Nitrosodiphenyl amine	<	2 ND
1,2-Diphenylhydrazine	<	2 ND
4-Bromodiphenyl ether	<	5 ND
Hexachlorobenzene	<	5 ND
Phenanthrene	<	1 ND
Anthracene	<	1 ND
Di-n-butylphthalate	<	1 ND
Fluoranthene	<	1 ND
* Benzidine	<	15 ND
Pyrene	<	1 ND
Butyl benzyl phthalate	<	2 ND
Benzo(a)anthracene	<	2 ND
* 3,3'-Dichlorobenzidine	<	10 ND
Chrysene	<	2 ND
Bis(2-ethylhexyl)phthalate	<	2 ND
Di-n-octylphthalate	<	2 ND
Benzo(b)fluoranthene	<	2 ND
Benzo(k)fluoranthene	<	2 ND
Benzo(a)pyrene	<	2 ND
Indeno(1,2,3-c,d)pyrene	<	5 ND
Dibenzo(a,h)anthracene	<	5 ND
Benzo(g,h,i)perylene	<	5 ND

* Seldomly encountered, reported semi-quantitatively.

TABLE 4

Comparison of survey results with the facility's NPDES Permit and Discharge Monitoring Report.

Effluent Parameter (unit)	Final Effluent Limitations				August Discharge Monitoring Report					Survey Results	
	30-day Avg.	7-day Avg.	Daily Min.	Daily Max.	Monthly Average	Monthly Maximum	7-day Average	08/24/92	08/25/92	Composite	grab
Outfall 030138 (001)											
Flow (MGD)				.6	.085	.102		0	.102	.1	
Temperature (F)				(report)	74	75					(76)
Tot. Copper (ug/l)				105	35	62				2	(1.4)
pH (S.U.)			6.5	9	MIN 7.2	7.4					(7.4)
Outfall 030053 (003)											
Flow (MGD)				9.955	1.633	2.26		1.66	1.38	1.5	
Tot. Copper (ug/l)				105	25	30		25		7.3	(8.5)
Tot. Zinc (ug/l)				506	25	29		17		24	(26)
Temperature (F)				(report)	79	83		80			(81)
Tot. Phosphorus (mg/l)	(report)				.88	1.47				.39	(1)
pH (S.U.)			6.5	9	MIN 7.7	8		7.7			(7.8)

TABLE 5

Comparison of the laboratory analytical results obtained by the facility and the MDNR Environmental Laboratory from the split samples.

Outfall	030138 (001)		030053 (003)	
Sample type	grab		grab	
Date & Time collected	08/24/92 0950		08/24/92 1015	
Parameter (unit)	facility results	MDNR results	facility results	MDNR results
Total Phosphorus (mg/l)	--	--	.89	1
Total Copper (ug/l)	16	1.4	30	8.5
Total Zinc (ug/l)	--	--	24	26

TABLE

Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2)
Phenols (Chlorine Present)	Dechlorinate w/ferrous ammonium sulphate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4 to pH <2.
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l, 10 drops 10 N NaOH (to pH >12)/250 ml.
Dissolved Oxygen(D.O.)	Meter reading.
Total Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3/250 ml (to pH <2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml to dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2)
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10 N NaOH to pH 9/250 ml.
Base-neutral & Acid Extractables	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Purgeable Organics	5 drops conc. HCl (to pH <2)

Samples preserved as required, cooled to 4 degrees Centigrade with chain of custody maintained.

Lab Letter Codes

ACC Laboratory accident resulted in no obtainable value.

DM Sample was diluted to reduce possible matrix interference.

FCN Free cyanide was not analyzed due to low level of total cyanide found. By definition, the free cyanide would be less than or equal to the total cyanide.

LH Quality control indicated possible low recovery. The actual level may have been higher than the reported value.

Lab Letter Codes con't.

ND Not detected.

PA High absorbance of the sample reagent blank may have affected the precision of the reported result.

Survey by: Chris C. Little, Water Quality Technician
Joseph W. Hey, Water Quality Technician

Contact with Management: Keith Kling

Laboratory Analyses by: MDNR Environmental Laboratory

Report by: Joseph W. Hey
Grand Rapids District Office
Surface Water Quality Division
Michigan Department of Natural Resources

MEN01592

Facility Wenatchee

Permit No. MI0003224

SECTION B. RECORDKEEPING AND REPORTING EVALUATION

YES NO N/A RECORDS AND REPORTS ARE MAINTAINED AS REQUIRED BY PERMIT

Yes No N/A 1. All Required information is available, complete, and current.

Yes No N/A 2. Information is maintained for at least three years.

Yes No N/A 3. Analytical results are consistent with the data reported on the MORs. (Suggestion: Check at least past 3 months, 5 data points per month)

4. Sampling and Analyses Data are adequate and include:

Yes No N/A a. Dates, times, frequency, location of sampling

Yes No N/A b. Name of individual performing sampling

Yes No N/A c. Results of analyses

Yes No N/A d. Dates of analyses

Yes No N/A e. Name of person performing analyses.

5. Monitoring records are adequate and include:

Yes No N/A a. Flow, pH, D.O., etc. as required by permit.

Yes No N/A b. Strip or circular charts are kept for a minimum of three years.

Yes No N/A 6. Laboratory equipment calibration and maintenance records are adequate. (see also Section G)

7. Plant Operation & Maintenance Records are adequate* and include: (see also Section I)

Yes No N/A a. O & M Manual Management Manual & Procedures

Yes No N/A b. "As-built" engineering drawings of wastewater treatment units.

Yes No N/A c. Schedules and dates of equipment maintenance and repairs

Yes No N/A d. Equipment supplies manual

Yes No N/A 8. SPCC/PIPP required?

Yes No N/A a. Available for inspection?

Yes No N/A b. Is PIPP approved and on file with DNR?

c. Date of last revision _____

*Required for facilities built with Federal construction grant funds or by permit.

Section B. completed by: [signature] Date 10-8-92

Facility Menasha

Permit No. MI0003824

SECTION C. FACILITY SITE REVIEW

Yes No N/A 1. Facility handles and disposes of sludge according to applicable Federal, State, and local regulations. City Permit #199222

Yes No N/A 2. All treatment units, other than backup units, are in service. If no, which units are not in service _____.

Yes No N/A 3. Operating schedules are established.
No. of shifts in operation 3 (industrial)
No. of shifts waste treatment in operation 3.
No. of shifts waste treatment system is staffed 1.

Yes No N/A 4. Any bypassing since last inspection. If yes, give date of bypass _____ and date of notification to DNR _____.

Yes No N/A 5. Hydraulic and/or organic overloads are experienced. If yes, give reasons. Are these due to infiltration/inflow, combined sewage, pump sizing?

_____

_____

_____

6. Facility flow rates:

Municipality

Previous year's average daily rate _____ MGD
Historical peak dry weather rate _____ MGD
Historical peak wet weather rate _____ MGD

Industry

Average Flow Rates

	Process Water	Non-Contact Cooling Water	Sanitary	Total
Outfall # 001	—	.085 MGD	—	.085
Outfall # 003	.750	.750	—	1.5
Outfall #				
Outfall #				
Outfall #				

Yes No N/A 7. Flow measurement devices are properly installed and maintained.

Yes No N/A 8. Flow is measured at proper locations.

Yes No N/A a. Influent flow is measured before all return lines.

Yes No N/A b. Effluent flow is measured after all return lines.

9. For municipality: Population currently served _____.
For industry: Number of employees currently working 330.

10. Water supply, wastewater treatment - list any changes from most recent inspection and CSI.

Added new clarifier, 4 aerators
2nd influent line to WWTP, 2 new
sludge pumps, consolidated several
outfalls.

11. Manufacturing operations which contribute wastewater (Industrial inspection only) - list any changes from most recent inspection.

Added brass stock washer to
reduce effluent flow.

Yes No N/A 12. Any citizen complaints or PEAS reports received since last inspection? If yes, list date and nature of complaint.

See file

Section C. completed by: [signature] Date 10-8-92

MEN01596

Facility Menasha

Permit No. MI 0003824

SECTION E. FLOW MEASUREMENT INSPECTION CHECKLIST

Part I. General (also found in Section C)

Yes No N/A 1. Primary flow measuring device is properly installed and maintained. Name primary device [illegible]. Design flow _____.

Yes No N/A 2. Flow records are properly kept. All strip or circular charts maintained by the permittee for [illegible] years.

Yes No N/A 3. Sharp drops or increases in flow values are accounted for.

Yes No N/A 4. Flow is measured at appropriate locations.

Yes No N/A a. Influent flow is measured before all return lines.

Yes No N/A b. Effluent flow is measured after all return lines.

Yes No N/A 5. Secondary instruments water level indicators (totalizers, recorders, etc.) are properly operated and maintained. Date of last calibration _____ _____.

Yes No N/A 6. Spare parts are stocked.

Part II. Flumes

Yes No N/A 1. Flow entering flume appears reasonably well distributed across the channel and free of turbulence, boils, or other distortions.

Yes No N/A 2. Cross-sectional velocities at entrance are relatively uniform.

Yes No N/A 3. Flume is clean and free of debris or deposits.

Yes No N/A 4. All dimensions of flume are accurate.

Yes No N/A 5. Side walls of flume are vertical and smooth.

Yes No N/A 6. Sides of flume throat are vertical and parallel.

Yes No N/A 7. Flume head is being measured at proper location.

Yes No N/A 8. Measurement of flume head is zeroed to flume crest.

Yes No N/A 9. Flume is of proper size to measure range of existing flow.

Yes No N/A 10. Flume is operating under free-flow conditions over existing range of flows.

11. How were the above determinations made by inspector -

Yes No N/A 9. Proper storage of chemicals and/or hazardous substances.

Yes No N/A 10. Diking adequate around storage tanks.

Yes No N/A 11. Labeling of chemicals adequate.

Yes No N/A 12. Evidence of chemical materials or oil leaks in storage areas, transfer lines, or feed locations. If yes, explain.

_____

13. Describe the general appearance (housekeeping) of units and buildings _____

_____

Yes No N/A 14. Alternate discharge points not noted in permit are being used. If yes, explain.

Section I. completed by: John Bantjes Date 6-1-89

MEN01598

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
MARLENE J FLUHARTY
KERRY KAMMER
O STEWART MYERS
DAVID D OLSON
RAYMOND POUPORE

JAMES J BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

DAVID F HALES Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

September 19, 1990

Mr. Keith Kling
Environmental Supervisor
Menasha Corporation
Otsego Paperboard Division
320 N. Farmer Street
Otsego, Michigan 49078-0158

Dear Mr. Kling

SUBJECT: NPDES Permit No. MI0003824
Compliance Sampling Inspection

On May 1-2, 1990, an Industrial Wastewater Survey was conducted at your facility. Enclosed for your records and review is a copy of the report of Survey.

The results of the Survey indicated you were meeting your NPDES Permit effluent limitations during the time of the survey. You will note in the comparisons of the split samples (Table 5) that the two laboratories suspended solids results differ as they have during the past surveys. This difference has been noted and discussed with staff in the past. During the next survey, we will request our laboratory to do the additional rinsing(s) during the suspended solids test.

If you have any questions concerning the survey, please call our office.

Sincerely,

C. E. Mogg

C. E. Mogg
Surface Water Quality Division
616-685-9886

CEM/cmb

Enclosure

R 1026-1
5/86

MEN01599

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Wastewater Survey
Conducted at
Menasha Corporation
Paperboard Division
All Outfalls No. 030019
NPDES No. MI0003824
Allegan County
Ostego, MI
05/01/90

SURVEY SUMMARY

Wastewater monitoring was performed during one twenty-four hour survey period starting Tuesday May 1, 1990.

The results of this survey are compared to the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0003824, in Table 4.

The results of this survey are compared to the results reported by the facility in their May Discharge Monitoring Report (DMR) in Table 4.

A grab sample from outfalls 030171 (000), 030134 (002), and 030055 (004) were split with the facility to compare laboratory analyses. The results are shown in Table 5.

The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scan analyses are presented in Table 3.

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SEP 13 1990
SWQD-Plainwell

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SURVEY PROCEDURE

The flows and samples were obtained as follows:

Sample Location	Flow Measurement	Sampling Methods
030171 (000) Process waste sampled at lagoon discharge.	Company Totalizer.	Air-Activated composite sampler and individual grab samples.
030053 (00A) Turbine cooling water sampled at splitter box.	Company DMR	Submergible sampler and individual grab samples.
030138 (001) Cooling water sampled at company weir.		Individual grab samples.
030134 (002) Process and cooling-sampled at company's 24" rectangular weir.	Company Totalizer	Submergible sampler and individual grab samples.
Pond Influent Sampled at surge pit.		Individual grab samples.
030055 (004) Sampled at company weir	Company DMR	Grab composite and individual grab samples.

An automatic sampler composites samples at timed intervals. Samples may be proportional to the instantaneous flow over the weir or through the flume.

A submergible sampler obtains samples at a continuous rate.

Extractable organic composite samples are collected by the grab composite method.

A grab composite consists of a series of individual grabs composited into one sample.

An individual grab is a single instantaneous sample.

Samples were analyzed by the MDNR Environmental laboratories located in Lansing.

Samples were preserved according to Table 7. The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scans are presented in Table 3. Letter codes for laboratory results are defined in Table 7.

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TABLE 1 - Analyses of Composite Samples

Outfall	030171 (000)			030053 (00A)	
Survey Period From	05/01/90 1040			05/01/90 1020	
To	05/02/90 1040			05/02/90 1020	
Computed Flow Rate	.58 MGD			5.6 MGD	
	mg/l	lbs/day		mg/l	lbs/day
Suspended Solids	1300	6288		10	467
Dissolved Solids	6600	31926		380	17748
BOD-5	270	1306			
CBOD-5	260	1258			
COD	4600	22251		21	981
TOC	1200	5805	DM	6.3	294
NO2	1	5			
NO3 + NO2	1.3	6	DM	1.1	51
NH3	<1	NA	DM	.04	2
Kjeldahl Nitrogen	58	281		.9	42
Total Phosphorus	3.5	17	DS	.06	3
Ortho Phosphate	.6	3			
Alkalinity (as CaCO3)	3266	NA			
Hardness (as CaCO3)	265	NA			
Conductivity (umho/cm)	5460	NA		616	NA
Calcium	69	334			
Chloride	160	774			
Potassium	100	484			
Magnesium	23	111			
Sodium	1500	7256			
Sulfate	240	1161			
	ug/l	lbs/day		ug/l	lbs/day
Phenols	250	1.209		28	1.308
Total Cadmium (Cd)	2.4	.012		<.2	NA
Total Chromium (Cr)	15	.073		<1	NA
Total Copper (Cu)	66	.319		2.4	.112
Total Lead (Pb)	35	.169		2.1	.098
Total Nickel (Ni)	18	.087		2.2	.103
Total Zinc (Zn)	230	1.113		5.6	.262
Total Mercury (Hg)	<.5	NA		<.5	NA
Total Titanium (Ti)	44	.213		<15	NA
Total Silver (Ag)	<.5	NA		<.5	NA

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TABLE 1 - Analyses of Composite Samples

Outfall	030134 (002)		030055 (004)	
Survey Period From	05/01/90 1000		05/01/90 1030	
To	05/02/90 1000		05/02/90 1030	
Computed Flow Rate	.48 MGD		.039 MGD	
	mg/l	lbs/day	mg/l	lbs/day
Suspended Solids	7	28	4	1
Dissolved Solids	410	1641	380	124
BOD-5	4	16	<2	NA
CBOD-5	3	12		
COD	22	88	9	3
TOC	7.3	29	3.3	1
NO3 + NO2	.6	2	1	0
NH3	<.01	NA	.12	0
Kjeldahl Nitrogen	.53	2	.36	0
Total Phosphorus	.094	0	.54	0
Ortho Phosphate	<.01	NA		
Conductivity (umho/cm)	689	NA	632	NA
Alkalinity (as CaCO3)	281	NA		
Hardness (as CaCO3)	280	NA		
Calcium	71	284		
Chloride	29	116		
Potassium	2.3	9		
Magnesium	25	100		
Sodium	34	136		
Sulfate	48	192		

	ug/l	lbs/day	ug/l	lbs/day
Phenols	25	.100	<10	NA
Total Cadmium (Cd)	<.2	NA	<.2	NA
Total Chromium (Cr)	<1	NA	<1	NA
Total Copper (Cu)	2	.008	9	.003
Total Lead (Pb)	1.1	.004	<1	NA
Total Nickel (Ni)	2.9	.012	<2	NA
Total Zinc (Zn)	38	.152	13	.004
Total Mercury (Hg)	<.5	NA	<.5	NA
Total Titanium (Ti)	<15	NA	<15	NA
Total Silver (Ag)	<.5	NA	<.5	NA

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TABLE 2 - Analyses of Grab Samples

Outfall	030171 (000)	030171 (000)
Matrix	water	water
Date Collected	05/01/90	05/01/90
Time Collected	1040	1835
Temperature (F)	66	70
pH (S.U.)	8.4	8.4
Chlorine (Cl)	U	U
Suspended Solids (mg/l)	1300	1300
Dissolved Solids (mg/l)	6700	6700
Dissolved Oxygen (mg/l)	1.6	1.6
BOD-5 (mg/l)	280	300
CBOD-5 (mg/l)	260	260
COD (mg/l)	4600	4400
TOC (mg/l)	1000 DM	1100 DM
NO2 (mg/l)	1	.9
NO3 + NO2 (mg/l)	2.4 DM	1.3 DM
NH3 (mg/l)	<2 DM	1.1 DM
Kjeldahl Nitrogen (mg/l)	59	56
Total Phosphorus (mg/l)	3.9	3.7
Conductivity (umho/cm)	5470	5440
Alkalinity (as CaCO3)	3298	3305
Hardness (as CaCO3)	270	275
Calcium (mg/l)	69	74
Potassium (mg/l)	80	2
Chloride (mg/l)	170	170
Sulfate (mg/l)	240	240
Magnesium (mg/l)	23	22
Sodium (mg/l)	1600	21
Ortho Phosphate (mg/l)	.5	.4
	ug/l	ug/l
Phenolics	260	300
Total Cadmium (Cd)	2.1	
Total Chromium (Cr)	18	
Total Copper (Cu)	72	
Total Nickel (Ni)	19	
Total Lead (Pb)	27	
Total Zinc (Zn)	180	
Total Silver (Ag)	<.5	
Total Titanium (Ti)	71	
Total Mercury (Hg)	<.5	

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TABLE 2 - Analyses of Grab Samples

Outfall	030138 (001)	030053 (00A)	030053 (00A)
Matrix	water	water	water
Date Collected	05/01/90	05/01/90	05/01/90
Time Collected	1130	1020	1845
Temperature (F)	73	72	75
pH (S.U.)	7.1	7.7	8
Chlorine (Cl)	U	U	U
Suspended Solids (mg/l)	<4	8	12
Dissolved Solids (mg/l)	340	380	380
Dissolved Oxygen (mg/l)	3.2	10.6	11.6
COD (mg/l)	11		
TOC (mg/l)	3.2		
Alkalinity (as CaCO3)	216		
Hardness (as CaCO3)	245		
Calcium (mg/l)	64		
Potassium (mg/l)	1.9		
Chloride (mg/l)	37		
Sulfate (mg/l)	30		
Magnesium (mg/l)	20		
Sodium (mg/l)	21		
Conductivity (umho/cm)	588	614	611
	ug/l		
Total Cadmium (Cd)	<.2		
Total Chromium (Cr)	<1		
Total Copper (Cu)	1.5		
Total Nickel (Ni)	<2		
Total Lead (Pb)	<1		
Total Zinc (Zn)	<4		
Total Mercury (Hg)	<.5		
Total Titanium (Ti)	<15		
Total Silver (Ag)	<.5		

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TABLE 2 - Analyses of Grab Samples

Outfall	030134 (002)	030134 (002)
Matrix	water	water
Date Collected	05/01/90	05/01/90
Time Collected	1000	1930
Temperature (F)	74	73
pH (S.U.)	8.2	8.4
Chlorine (Cl)	U	.008
Suspended Solids (mg/l)	14	9
Dissolved Solids (mg/l)	410	480
Dissolved Oxygen (mg/l)	9.6	9
CBOD-5 (mg/l)	8	10
BOD-5 (mg/l)	9	12
COD (mg/l)	34	45
TOC (mg/l)	10	14
NO3 + NO2 (mg/l)	.68	.65
NH3 (mg/l)	<.01	.01
Kjeldahl Nitrogen (mg/l)	.71	.5
Total Phosphorus (mg/l)	.15	.2
Ortho Phosphate (mg/l)	.01	.02
Conductivity (umho/cm)	689	749
Alkalinity (as CaCO3)	285	315
Hardness (as CaCO3)	290	285
Calcium (mg/l)	74	72
Potassium (mg/l)	2.4	2.3
Chloride (mg/l)	28	31
Sulfate (mg/l)	48	54
Magnesium (mg/l)	26	26
Sodium (mg/l)	36	48
	ug/l	ug/l
Phenolics	160	150
Total Cadmium (Cd)	<.2	<.2
Total Chromium (Cr)	<1	<1
Total Copper (Cu)	3.2	3.9
Total Nickel (Ni)	<2	2.6
Total Lead (Pb)	<1	1
Total Zinc (Zn)	15	25
Total Mercury (Hg)	<.5	<.5
Total Titanium (Ti)	17	<15
Total Silver (Ag)	<.5	<.5

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TABLE 2 - Analyses of Grab Samples

Outfall	Surge Pit	030055 (004)	030055 (004)
Matrix	water	water	water
Date Collected	05/01/90	05/01/90	05/01/90
Time Collected	1340	1030	1900
Temperature (F)	81	78	80
pH (S.U.)	7.5	8.4	8.2
Chlorine (Cl)	U	U	U
Suspended Solids (mg/l)	2300	<4	6
Dissolved Solids (mg/l)	10000	380	390
Dissolved Oxygen (mg/l)		9.1	7.8
BOD-5 (mg/l)	4400	<2	<2
Conductivity (umho/cm)	4690	637	642

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TABLE 3

Outfall		030171 (000)
Matrix		water
Sample Type		grab
Date & Time Collected		05/01/90 1040
Scan 1-Purgeable Halocarbons		
Dilution Factor		5
		ug/l
Trichlorofluoromethane	<	25 ND
Vinyl chloride	<	25 ND
Bromomethane	<	25 ND
Chloroethane	<	25 ND
Bromodichloromethane	<	5 ND
Bromoform	<	5 ND
Carbon Tetrachloride	<	5 ND
Chlorobenzene	<	25 ND
Chloroform	<	5 ND
Dibromochloromethane	<	5 ND
1,1-Dichloroethane	<	5 ND
1,2-Dichloroethane	<	5 ND
1,1-Dichloroethene	<	5 ND
trans-1,2-Dichloroethene	<	5 ND
cis-1,2-Dichloroethene	<	5 ND
1,2-Dichloropropane	<	5 ND
trans-1,3-Dichloropropene	<	5 ND
cis-1,3-Dichloropropene	<	5 ND
Methylene chloride	<	25 ND
1,1,2,2-Tetrachloroethane	<	5 ND
Tetrachloroethene	<	5 ND
1,1,1-Trichloroethane	<	5 ND
1,1,2-Trichloroethane	<	5 ND
Trichloroethene	<	5 ND
Scan 2 - Purgeable Aromatic Hydrocarbons		
Dilution factor		5
		ug/l
Benzene	<	50 ND
Ethylbenzene	<	50 ND
Toluene	<	50 ND
Xylene isomers (o, m, and p)	<	50 ND

TABLE 3 Menasha

Scan 3-Chlorinated Hydrocarbons, PCBs & Organochlorine Pesticides

Outfall		030171 (000)
Matrix		water
Sample Type		composite
Survey Period	from	05/01/90 1040
	to	05/02/90 1040
Dilution Factor		1

		ug/l	
Aldrin	<	.01	ND
*Aroclor 1016	<	.05	ND
*Aroclor 1221	<	.05	ND
*Aroclor 1232	<	.05	ND
Aroclor 1242	<	.05	ND
*Aroclor 1248	<	.05	ND
Aroclor 1254	<	.05	ND
Aroclor 1260	<	.05	ND
*Aroclor 1262	<	.05	ND
*Aroclor 1268	<	.05	ND
a-BHC	<	.01	ND
b-BHC	<	.01	ND
d-BHC	<	.01	ND
g-BHC (lindane)	<	.01	ND
BP-6 (PBB)	<	.05	ND
a-Chlordane	<	.01	ND
g-Chlordane	<	.01	ND
2-Chloronaphthalene	<	.2	ND
4,4'-DDD	<	.01	ND
4,4'-DDE	<	.01	ND
1,4'-DDT	<	.01	ND
4,4'-DDT	<	.01	ND
1,2-Dichlorobenzene	<	.1	ND
1,3-Dichlorobenzene	<	.1	ND
1,4-Dichlorobenzene	<	.1	ND
Dieldrin	<	.01	ND
Endosulfan I	<	.01	ND
Endrin	<	.01	ND
Heptachlor	<	.01	ND
Heptachlor epoxide	<	.01	ND
Hexabromobenzene	<	.01	ND
Hexachlorobenzene	<	.01	ND
Hexachlorobutadiene	<	.01	ND
Hexachlorocyclopentadiene	<	.01	ND
Hexachloroethane	<	.01	ND
Methoxychlor	<	.01	ND
Mirex	<	.01	ND
Pentachlorobenzene	<	.01	ND
Pentachloronitrobenzene	<	.01	ND
1,2,3,4-Tetrachorobenzene	<	.01	ND
1,2,4,5-Tetrachlorobenzene	<	.01	ND
*Toxaphene	<	.05	ND
1,2,3-Trichlorobenzene	<	.01	ND
1,4,4-Trichlorobenzene	<	.01	ND
1,3,5-Trichlorobenzene	<	.01	ND

* Seldomly encountered, reported semi-quantitatively

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TABLE 3

Outfall		030171 (000)
Matrix		water
Sample Type		composite
Date & Time Collected	from	05/01/90 1040
	to	05/02/90 1040

Scan 8-Phenols

Dilution factor		1
		ug/l
Phenol	<	10 ND
2-Chlorophenol	<	10 ND
2-Nitrophenol	<	10 ND
2,4-Dimethylphenol	<	10 ND
2,4-Dichlorophenol	<	10 ND
4-Chloro-3-methylphenol	<	10 ND
* 3-Phenylpropionic acid	<	10 ND
2,4,6- Trichlorophenol	<	40 ND
2,4,5-Trichlorophenol	<	10 ND
2,4-Dinitrophenol	<	40 ND
4-Nitrophenol	<	40 ND
2-Methyl-4,6-dinitrophenol	<	40 ND
Pentachlorophenol	<	40 ND

* Seldom encountered, reported semi-quantitatively.

Menasha

TABLE 3 - Organic Scan List

GC/MS Base/Neutrals

Outfall		030171 (000)
Matrix		water
Sample Type		composite
Date & Time collected		05/01/90 1040 to 05/02/90 1040
Dilution Factor		1
		ug/l
Bis(2-chloroethyl)ether	<	2 ND
1,3-Dichlorobenzene	<	2 ND
1,4-Dichlorobenzene	<	2 ND
1,2-Dichlorobenzene	<	2 ND
Bis(2-chloroisopropyl)ether	<	5 ND
N-Nitroso-di-n-propylamine	<	5 ND
Hexachloroethane	<	5 ND
Nitrobenzene	<	2 ND
Isophorone	<	1 ND
Bis(2-chloroethoxy)methane	<	2 ND
1,2,4-Trichlorbenzene	<	2 ND
Naphthalene	<	1 ND
Hexachlorobutadiene	<	5 ND
Hexachlorocyclopentadiene	<	5 ND
2-Chloronaphalene	<	2 ND
Dimethylphthalate	<	2 ND
Acenaphthylene	<	1 ND
2,6-Dinitrotoluene	<	5 ND
Acenaphthene	<	2 ND
2,4-Dinitrotoluene	<	5 ND
Fluorene	<	2 ND
Diethylphthalate	<	2 ND
4-Chlorodiphenyl ether	<	5 ND
N-Nitrosodiphenyl amine	<	2 ND
1,2-Diphenylhydrazine	<	2 ND
4-Bromodiphenyl ether	<	5 ND
Hexachlorobenzene	<	5 ND
Phenanthrene	<	1 ND
Anthracene	<	1 ND
Di-n-butylphthalate	<	1 ND
Fluoranthene	<	1 ND
* Benzidine	<	15 ND
Pyrene	<	1 ND
Butyl benzyl phthalate	<	2 ND
Benzo(a)anthracene	<	2 ND
* 3,3'-Dichlorobenzidine	<	10 ND
Chrysene	<	2 ND
Bis(2-ethylhexyl)phthalate	<	2 ND
Di-n-octylphthalate	<	2 ND
Benzo(b)fluoranthene	<	2 ND
Benzo(k)fluoranthene	<	2 ND
Benzo(a)pyrene	<	2 ND
Indeno(1,2,3-c,d)pyrene	<	5 ND
Dibenzo(a,h)anthracene	<	5 ND
Benzo(g,h,i)perylene	<	5 ND

* Seldomly encountered, reported semi-quantitatively.

Menasha

TABLE 4

Comparison of survey results with the facility s NPDES Permit and Discharge Monitoring Report.

Effluent Parameter (unit)	Final Effluent Limitations 30-day Avg.	7-day Avg.	Daily Min.	Daily Max.	May Discharge Monitoring Report Monthly Average	Monthly Maximum	7-day Average	05/01/90	05/02/90	Survey Results Composite	(grab)
Outfall 030171 (000)											
Flow (MGD)					.634	.92		.612	.556	.58	
Ortho-phos. (Sol.) (mg/l)										.6	(.5,.4)
Ortho-phos. (Sol.)(lbs/day)	8				.27	.31				3	
BOD-5 (mg/l)					257	335		222	228	270	(280,300)
BOD-5 (lbs/day)										1306	
Susp. Solids (mg/l)					559	867		567	700	1300	(1300,1300)
Susp. Solids (lbs/day)										6288	
pH (S.U.)			6	9	MIN 8.2	8.6		8.3	8.3		(8.4,8.4)
Outfall 030134 (002)											
Flow (MGD)					.482	.572		.512	.428	.48	
BOD-5 (mg/l)					6	33		4	23	4	(9,12)
BOD-5 (lbs/day)					23	138		17	82	16	
Susp. Solids (mg/l)					8	72		6	72	7	(14,9)
Susp. Solids (lbs/day)					30	257		26	257	28	
pH (S.U.)			6	9	MIN 8.2	8.5		8.5	8.4		(8.2,8.4)
Outfalls (000)+(002) comb.											
1693 BOD-5 (lbs/day)				3725	1401	2404		1150	1139		
5376 Susp. Solids (lbs/day)	3584			5376	2971	4642		2920	3503	6316	
Outfall 030138 (001)											
Flow (MGD)					.416	.46		.429	.37		
pH (S.U.)			6	9	7.3	7.6		7.5			(7.1)
Outfall 030055 (004)											
Flow (MGD)					.028	.042		.042	.035	.039	
Susp. Solids (mg/l)	20			50	.8	1				4	(<4,6)
Susp. Solids (lbs/day)	39			96	.17	.23				1	
pH (S.U.)			6	9	MIN 7.8	8.2					(8.4,8.2)

Menasha

Table 5

Comparison of the laboratory analytical results obtained by the facility and the MDNR Environmental Laboratory from the split samples.

Outfall	030171 (000)		030134 (002)	
Sample type	grab		grab	
Date & Time collected	05/01/90 1040		05/01/90 1000	
Parameter (unit)	facility results	MDNR results	facility results	MDNR results
BOD-5 (mg/l)	270	280	13	9
Suspended Solids (mg/l)	700	1300	10	14
Sol. Ortho Phosphate (mg/l)	.19	.5		

Outfall	030055 (004)	
Sample type	grab	
Date & Time collected	05/01/90 1030	
Parameter (unit)	facility results	MDNR results
Suspended Solids (mg/l)	.4	<4

Menasha

TABLE 6

Comparison of the previous survey results with the results obtained in this survey.

Outfall	030171 (000)		030053 (00A)	
Matrix	water		water	
Survey Date From	04/18/88	05/01/90	04/18/88	05/01/90
To	04/19/88	05/02/90	04/19/88	05/02/90
	mg/l	mg/l	mg/l	mg/l
Suspended Solids	1900	1300	15	10
Dissolved Solids	5000	6600	340	380
BOD-5	360	270		
CBOD-5	400	260		
COD	3900	4600	19	21
TOC	1200	1200	5.4	6.3
NO3 + NO2	.8	1.3	1.1	1.1
NH3	1.4	<1	.07	.04
Kjeldahl Nitrogen	45	58	.64	.9
Total Phosphorus	3.9	3.5	.08	.06
Alkalinity (as CaCO3)	3348	3266		
Hardness (as CaCO3)	340	265		
Calcium	90	69		
Chloride	200	160		
Potassium	86	100		
Magnesium	28	23		
Sodium	1600	1500		
Sulfate	280	240		
	ug/l	ug/l	ug/l	ug/l
Phenolics	450	250		
Total Cadmium (Cd)	1.6	2.4	<.2	<.2
Total Chromium (Cr)	<18	15	<3	<1
Total Copper (Cu)	80	66	1.8	2.4
Total Nickel (Ni)	<25	18	<4	2.2
Total Lead (Pb)	46	35	2	2.1
Total Zinc (Zn)	250	230	5	5.6
Total Silver (Ag)	<2	<.5	<.5	<.5

Menasha

TABLE 6

Comparison of the previous survey results with the results obtained in this survey.

Outfall		030134 (002)		030055 (004)	
Matrix		water		water	
Survey Date	From	04/18/88	05/01/90	04/18/88	05/01/90
	To	04/19/88	05/02/90	04/19/88	05/02/90
		mg/l	mg/l	mg/l	mg/l
Suspended Solids		100	7	<4	4
Dissolved Solids		730	410	530	380
BOD-5		99	4	<2	<2
CBOD-5		100	3		
COD		410	22	19	9
TOC		120	7.3	5.8	3.3
NO3 + NO2		<.1	.6	.54	1
NH3		<.1	<.01	.16	.12
Kjeldahl Nitrogen		2.8	.53	.29	.36
Total Phosphorus		1	.094	.16	.54
Alkalinity (as CaCO3)		396	281		
Hardness (as CaCO3)		290	280		
Calcium		72	71		
Chloride		34	29		
Potassium		4.3	2.3		
Magnesium		27	25		
Sodium		97	34		
Sulfate		62	48		
		ug/l	ug/l	ug/l	ug/l
Phenolics		1200	25	11	<10
Total Cadmium (Cd)		.4	<.2	<.2	<.2
Total Chromium (Cr)		<3	<1	<3	<1
Total Copper (Cu)		8.9	2	5.7	9
Total Nickel (Ni)		<4	2.9	<4	<2
Total Lead (Pb)		4.3	1.1	<1	<1
Total Zinc (Zn)		22	38	4.2	13
Total Silver (Ag)		<.5	<.5	<.5	<.5

Menasha

TABLE 7

Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2)
Phenols (Chlorine Present)	Dechlorinate w/ferrous ammonium sulphate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4 to pH <2.
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l, 10 drops 10 N NaOH (to pH >12)/250 ml.
Dissolved Oxygen(D.O.)	Meter reading.
Total Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3/250 ml (to pH <2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml to dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2)
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10 N NaOH to pH 9/250 ml.
Base-neutral & Acid Extractables	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Purgeable Organics	5 drops conc. HCl (to pH <2)

Samples preserved as required, cooled to 4 degrees Centigrade with chain of custody maintained.

Lab Letter Codes

DM Sample was diluted to reduce possible matrix interference.

ND Not detected.

U Indicates material was analyzed for but not detected.

Part III. Wiers

1. What type of weir is being used? _____

Yes No N/A 2. The weir is exactly level.

Yes No N/A 3. The weir plate is plumb and its top edges are sharp and clean.

Yes No N/A 4. There is free access for air below the nappe of the weir.

Yes No N/A 5. Upstream channel of weir is straight for at least four times the depth of water level, and free from disturbing influences.

Yes No N/A 6. The stilling basin of the weir is of sufficient size and clear of debris.

Yes No N/A 7. Head measurements are properly made by facility personnel.

Yes No N/A 8. Is weir type appropriate for flow volume?

9. How were above determinations made -
[X] Visual Observations [] Actual Measurements

Part IV. Other Flow Devices

1. Type of flowmeter used: _____

2. List any problems the operator has had with the flowmeter:

_____

_____

3. Measured wastewater flow: _____mgd; Recorded flow: _____mgd; Error _____%

4. Design flow: _____mgd.

Yes No N/A 5. Flow totalizer is properly calibrated. Date last calibrated _____.

6. Frequency of routine inspection by proper operator: _____/day

7. Frequency of maintenance inspections by plant personnel: _____

8. Frequency of flowmeter calibration: _____
Date of last calibration _____.

Yes No N/A 9. Flow measurement equipment adequate to handle expected ranges of flow rates.

Yes No N/A 10. Venturi meter is properly installed and calibrated.

Yes No N/A 11. Electromagnetic flowmeter is properly calibrated.

MEN01617

Facility Menasha
Permit No. MI-0003824

SECTION F. PERMITTEE SAMPLING INSPECTION CHECKLIST

Yes No N/A 1. Samples are taken at sites specified in permit.

Yes No N/A 2. Locations are adequate for representative samples.

Yes No N/A 3. Flow proportioned samples are obtained where required by permit.

Yes No N/A 4. Sampling and analysis completed on parameters specified by permit.

Yes No N/A 5. Sampling analysis done at frequency specified by permit.

Yes No N/A 6. Permitee is using methods of sample collection required by permit. Required Method: _____
If not, method being used is: [] Grab [] Manual composite
[] Automatic Composite

7. Sample collection procedures are adequate:

Yes No N/A a. Samples refrigerated during compositing
Yes No N/A b. Proper preservation techniques used
Yes No N/A c. Containers and sample holding times conform with 40 CFR 136.3

8. List preservation techniques, containers, and holding times by parameter.

Parameters	Preservation	Container Used	Holding Time
BOD	none	plastic	1 hr
TSS	none	plastic	2 hrs
Tot P	[illegible]	glass	[illegible]
Pho P	cooled	glass	< [illegible]
Cu	[illegible]	[illegible]	[illegible]
Zn	[illegible]	[illegible]	[illegible]

Yes No N/A 9. Monitoring and analyses are performed more often than required by permit.

Yes No N/A If so, results reported in permittee's self-monitoring report.
List parameters:

Section F. completed by: [signature] Date 10-8-92

Facility Menasha
Permit No. MI0003824

SECTION G. LABORATORY

METHODS/INSTRUMENTATION

Yes No N/A 1. Are analyses done on site?

Yes No N/A 2. Is a commercial laboratory used? If yes:
How often [illegible]
What parameter(s) [illegible]
Name of laboratory [illegible]
Address [illegible]
Contact person [illegible]
Telephone number [illegible]
Are samples properly preserved? Yes
Does lab have chain of custody procedures? Yes
Does lab have QA/QC program? Yes

3. Analytical methods used: (refer to 40 CFR 136)

Approved Method? Yes	No	Parameter	Method Used	Comments
[X]	[ ]	BOD	MDNR Lab Manual	
[X]	[ ]	TSS	[illegible]	
[X]	[ ]	[illegible]	[illegible]	
[X]	[ ]	[illegible]	[illegible]	
[X]	[ ]	Cu	[illegible]	
[X]	[ ]	Zn	[illegible]	
[X]	[ ]	pH	[illegible]	
[ ]	[ ]			

Yes No N/A 4. Proper approval has been obtained for alternate methods.

Yes No N/A 5. Facility has written procedures for methods.
[illegible] MDNR Lab Manual [illegible]

Yes No N/A 6. Facility has written procedures for instrument and equipment use. [illegible]

7. Instrument calibration methods:

Calibration Adequate? Yes	No	Instrument	Calibration Technique	Frequency	Date Last Calibrated
[X]	[ ]	[illegible]	[illegible]	[illegible]	[illegible]
[X]	[ ]	[illegible]	[illegible]	[illegible]	[illegible]
[X]	[ ]	[illegible]	[illegible]	[illegible]	[illegible]
[X]	[ ]	"	[illegible]	[illegible]	[illegible]
[ ]	[ ]				
[ ]	[ ]				

Yes No N/A 8. Instrument calibration records are maintained.
If yes, how long are records maintained? [illegible]

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Yes No N/A 1. QA/QC procedures are used.

Yes No N/A 2. A written QA/QC manual is available to lab personnel

Yes No N/A 3. QA/QC results are properly recorded.

Yes No N/A 4. Laboratory log books (Equipment Temperature, Maintenance, Reagents, Daily Log) are maintained.

Yes No N/A 5. Precision and accuracy data are generated, recorded, and plotted to determine whether valid, questionable, or invalid data are being generated from day-to-day. If yes, how often? _____

6. QA/QC methods used:

Parameter	Sample Blanks	Replicated Samples	Spiked Samples	Stds/Ref Samples	EPA/DMR Study	Inter/Intra Lab Checks	% of Total
BOD	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
TSS	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
Tot P	[ ]	[ ]	[X]	[ ]	[X]	[ ]	[ ]
Ortho P	[ ]	[ ]	[X]	[ ]	[X]	[ ]	[ ]
Ni	[ ]	[ ]	[X]	[ ]	[X]	[ ]	[ ]
Zn	[ ]	[ ]	[X]	[ ]	[X]	[ ]	[ ]
pH	[ ]	[ ]	[ ]	[X]	[X]	[ ]	[ ]
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
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	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Comments: _____

7. If facility laboratory participates in EPA DMR/QA program, results from last round: See attached

Acceptable Result Yes	Acceptable Result No	Parameter	Lab Result	Actual Level
[ ]	[ ]			
[ ]	[ ]			
[ ]	[ ]			
[ ]	[ ]			

LABORATORY DATA HANDLING

Yes No N/A 1. Adequate bench sheets are used for each analysis.

Yes No N/A 2. Calculation methods are correct and not clearly stated.

Yes No N/A 3. Significant figures are established for each analysis.

Yes No N/A 4. Data are reported in proper form and units.

Yes No N/A 5. Laboratory records (calibration logs, bench sheets, monthly reports, etc.) are kept available for review for at least three years.

Yes No N/A 6. Data handling quality control measures are used to minimize transcription and other data handling errors.
[illegible]

LABORATORY EQUIPMENT/PERSONNEL

Yes No N/A 1. Instruments and equipment appear to be in good condition.
Comment: _____

Yes No N/A 2. Written maintenance schedule/record is maintained.

Yes No N/A 3. Proper volumetric glassware is used.

Yes No N/A 4. Glassware is properly cleaned and sterilized, if necessary.

Yes No N/A 5. A reagent log is kept recording dates of delivery or preparation and shelf life. Recommend

Yes No N/A 6. Standards and reagents are properly discarded when their recommended shelf life has expired. Recommend

Yes No N/A 7. Laboratory wastes are properly disposed.

Yes No N/A 8. Written procedures exist for spill clean-up and hazard response methods. [illegible] in lab.

9. Analyst(s) training:

Analyst(s) Name(s)	[illegible]	
Years Experience	[illegible]	
Education	[illegible]	
Special Training	[illegible]	
Licenses/Certifications	[illegible]	

Recommend [illegible]

Section 3. Completed by: [signature] Date 10-9-92

ATTACHMENT #1

PERFORMANCE EVALUATION REPORT DATE: 7/28/9

DMR-QA STUDY NUMBER 012

MEN01621

PERMITTEE: MI0003824 MENASHA PAPERBOARD DIVISION IC

ANALYTES	VP	REPORT VALUE	TRUE VALUE*	ACCEPTANCE LIMITS	WARNING LIMITS	PERFORMANC EVALUATION
TRACE METALS IN MICROGRAMS PER LITER:						
COPPER		795	790	714- 877	735- 856	ACCEPTAB
ZINC		347	360	318- 406	329- 395	ACCEPTAB
MISCELLANEOUS ANALYTES:						
PH-UNITS		9.30	9.40	9.09- 9.64	9.16- 9.57	ACCEPTAB
TOTAL SUSPENDED SOLIDS (IN MG/L)		25.0	25.0	16.3- 30.3	18.1- 28.6	ACCEPTAB
NUTRIENTS IN MILLIGRAMS PER LITER:						
TOTAL PHOSPHORUS		1.09	0.940	0.704- 1.14	0.756- 1.09	ACCEPTAB
ORTHOPHOSPHATE		0.058	0.510	0.419-0.598	0.440-0.577	NOT ACCEPTAB
DEMANDS IN MILLIGRAMS PER LITER:						
5-DAY BOD		32.7	36.0	20.7- 51.4	24.5- 47.6	ACCEPTAB
ADDITIONAL MISCELLANEOUS ANALYTES:						
TOTAL RESIDUAL CHLORINE (IN MG/L)		0.80	0.440	0.224-0.608	0.275-0.557	NOT ACCEPTAB

* BASED UPON THEORETICAL CALCULATIONS, OR A REFERENCE VALUE WHEN NECESSARY

PERFORMANCE EVALUATION REPORT DATE: 7/28/9:

DMR-QA STUDY NUMBER 012

MEN01622

PERMITTEE: MI0003824 MENASHA PAPERBOARD DIVISION IC

ANALYTES	V P	REPORT VALUE	TRUE VALUE*	ACCEPTANCE LIMITS	WARNING LIMITS	PERFORMANC: EVALUATION
FATHEAD MINNOW ACUTE DATA AS % OF SAMPLE:						
LC50 - MHRW, 20 DEG.		43.5	39.7	16.1- 63.4	21.9- 57.6	ACCEPTAB:
DAPHNIA MAGNA ACUTE DATA AS % OF SAMPLE:						
LC50 - MHRW, 20 DEG.		70.5	73.1	49.0- 97.2	55.1- 91.1	ACCEPTAB:

* BASED UPON THEORETICAL CALCULATIONS, OR A REFERENCE VALUE WHEN NECESSARY

TAL PROTECTION AGENCY

PAPERBOARD DIVISION

MENASHA CORPORATION

January 15, 1993

Gregory Danneffel
Michigan Dept. of Natural Resources
Plainwell District Headquarters
Box 355
Plainwell, MI 49080

Dear Greg,

I have received your letter of December 8, 1992 concerning the Compliance Sampling Inspections conducted on August 24 and October 8. We have addressed the issues as follows.

1. A log sheet for calibration and maintenance of equipment is being developed. A single, monthly log sheet for the scales, pH meter, specific ion electrodes, incubator, DO. meter, refrigerator, oven, and 003 weir flow meter will be in place by March 1, 1993.

2. Written procedures for each laboratory analysis have been placed in the environmental lab in the form of a "Standard Methods" book and a "DNR Lab Training Manual". The manuals were previously available in my office, and the methods described were in use.

3. Our Waste Treatment Operator has contacted some local laboratories about the structure of their QA/QC Program. Also he has attended a MDNR sponsored QA/QC training session. A written plan is presently being developed and will be in place by May 30, 1993.

4. Your letter recommends that we revise our lab sheets to put all information for one month on one sheet to avoid transcription errors. We have looked at several options to design a monthly sheet and find they are all very cumbersome. In addition, putting all numbers for a month on single sheet increases paperwork and, therefore, transcription errors. Unless you can provide us with specific examples of forms that will meet both our objectives, I feel it appropriate to continue with our current worksheets.

5. A log sheet will be developed to record dates reagents are made as well as their expiration date. Disposal of reagents is completed in accordance with

Otsego Mill
120 N Farmer St
PO Box 155
Otsego MI 49078-0155
1-616-692-6141
1-616-692-2060 (Fax)

MSDS recommendations. The reagent log sheet will be in use by March 1, 1993.

6. Spill response and cleanup procedures are currently followed as part of our Lab Chemical Hygiene Plan. This plan is reviewed annually and a copy of the plan will be kept in the lab.

7. A portable eyewash has been placed in the lab in case of emergency.

8. Your letter indicates that several pollutants were found in our effluent that require further study. I cannot respond to this concern until I receive more specific information. Please provide me with detail on the chemicals of concern and level of concern at your earliest convenience.

9. Color from our effluent was brought out as a concern. Following investment of 1.5 million dollars at waste treatment in August 1991, the color in our effluent was very significantly reduced. The system is currently operating at its practical limit for color reduction.

If you have any questions or concerns call us at 616-692-6141.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith B. Kling
Environmental Supervisor

KBK:jes

cc: P. Jachim
A. Switzenberg
G. Roys
L. Myers
P. DeRossi

NATURAL RESOURCES
COMMISSION
LARRY DEVUYST
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STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESO

ROLAND HARMES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigar

Asked Greg to send me qualit. data. Current Rule 57 quality data is 00023µg/l or 23 PPT.

March 9, 1993

Mr. Keith B. Kling, Environmental Supervisor
Menasna Corporation, Paperboard Division
320 North Farmer Street
Otsego, Michigan 49078-0155

MEN01625

Dear Mr. Kling:

SUBJECT: August 24, 1992 Compliance Sampling Inspection

Staff of the Surface Water Quality Division, Great Lakes and Environmental Assessment Section (GLEAS) have review the analytical results from the referenced inspection. Additional monitoring of effluent from outfall 003 is recommended.

4,4'-DDT was reported at a concentration which exceeds the allowable level for DDT. However, the detection level for DDT used by the MDNR laboratory is 0.01 ug/l, which is very close to the level detected.

Therefore, Menasha should initiate sampling of outfall 003 effluent on a quarterly basis for 4,4'-DDT. Samples should be collected as composites and analyzed using EPA Approved Method 608 and a detection level of 0.01 ug/l.

Please provide a written response to this office, no later than April 9, 1993, outlining the schedule that will be followed to complete this monitoring.

Please feel free to contact me if you have any questions.

Sincerely,

Gregory A. Danneffel
Surface Water Quality Division
616-685-9886

GD:clm

cc: Ms. Sylvia Heaton, MDNR

MEN01626

PAPERBOARD DIVISION

MENASHA CORPORATIO

May 3, 1993

Mr. Greg Danneffel
MDNR
621 10th Street
Plainwell, MI 49080

Dear Greg,

This letter is a follow-up to our conversation concerning your request to monitor our 003 Outfall for 4,4' DDT. Your March 9 letter had requested that we submit a quarterly sampling schedule for this chemical. After receiving your letter, I researched testing detection capabilities and have the following questions about the test result.

1. The CSI Report listed a level of 0.011 ppb of 4,4' DDT in the outfall. The source lab I contacted stated that they normally are able to reach a detection limit of 0.012 ppb on a clear water sample. On our effluent they believe this detection level is not attainable.

2. To ensure a valid test, the result must be obtained on 2 columns. Was this the case with the test in question?

3. Our source lab indicated that when 4,4' DDT is present, 4,4' DDE is found as well in nearly every case. This was not found in our effluent.

4. DDT is still used in many areas of the world and is ubiquitous in the USA at some low background level. Does MDNR have any data on background levels for this chemical?

After we have an opportunity to review the test data, I would like to meet with you to determine if additional testing of our effluent for 4,4' DDT is necessary.

If you have any questions concerning this matter, please call me at 692-6141.

Sincerely,

Otsego Paperboard Division

Keith Kling
Environmental Supervisor

cc: Paul Jachim
Len Myers
Pete DeRossi
Al Switzenberg
Gary Roys

K:amc1

Otsego Mill
320 N Farmer St
PO Box 155
Otsego MI 49078-0155
1-616-692-6141
1-616-692 2060 (Fax)

MEN01627

STATE OF MICHIGAN

NATURAL RESOURCES
COMMISSION
ERRY C BARTNIK
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JORDAN B TATTER

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

May 14, 1993

Mr. Keith Kling
Menasha Corporation
320 North Farmer Street
P.O. Box 155
Otsego, Michigan 49078-0155

Dear Mr. Kling:

Enclosed please find the laboratory information associated with the 4,4' DDT analysis discussed in my March 9, 1993 letter to you. It does appear that there is some question as to the actual level of this compound in Menasha's effluent.

We intend to resample Menasha's effluent at some time in the future. You may split this sample and have it analyzed by an independent laboratory if you wish.

You also asked for information regarding background levels for DDT. I have enclosed analytical results for samples taken from the Kalamazoo River on the day that samples were taken from Menasha's discharge. The results are all nondetectable. This implies that if 4,4' DDT was/is present in your facility's effluent, the source is not likely to be the river itself.

Please feel free to contact me if you have any questions regarding this letter or the enclosed information.

Sincerely,

Gregory A. Danneffel
Surface Water Quality Division
616-685-9886

GD:clm

cc: Ms. Sylvia Heaton, MDNR

MEN01628

Michigan Department of Natural Resources

Interoffice Communication

May 10, 1993

To: Greg Danneffel, SWQD

From: John Vanderhoof, Lab Scientist VII
Environmental Laboratory

Subject: Sample 9208102 4,4'-DDT Result

Enclosed are copies of the raw data for our Scan 3 analysis. (Pesticides by ECD). The confirmation is questionable, but the results were codes as LH. (Low recovery and semi-quantitative)

If you have further questions call me at 335-9800.

RECEIVED
MAY 1[illegible] 1993
SWQD-Plainwell

MEN01629

COMPLIANCE MONITORING FIELD SHEET DATE _____

Company: Menasha (Resample) Facility Number _____

Address: Otsego Contact: Keith Kling

Permit # MI0003824 Initial/Interim/Final Set up Last Survey _____

Outfall No Men003 Description: Process Flow _____

Split Parameters: per Company

Special Instructions (Pictures, filtering equip., etc.

Resample parameter of concern from last CSI

COMPOSITE

GN

O-P NO_2 SS DS

BOD_5 $CBOD_5$ _____

GA

COD TOC Nuts _____

GG GB S

Phenol Cyanide T A Sulfide

ON - Scan 3 ☐ high

OB - GC/MS ☐

OA - Scan 8 ☐

MN

Conductivity

Cl SO_4 Alk

Cr + 6

Fluoride Hardness Bio

M A

Cd Cr Cu Ni Pb Zn - low/re

Fe Co Li Mn

Al Ba Be Mo Ti V

Se Ag Ca Mg Na K

Hg As Sb Sn (Q+)

Grabs	1/24	2/24	3/24	4/24	
Sample#					Comments
Date	5-17-93				
Time	1000				
ON 4-4' DDT	✓ *				

RECEIVED

JUL 16 1993

SWQD-Plainwell

Totalizer _____ 2nd reading date _____ time _____

Flow _____ 1st reading date _____ time _____

X Factor _____ * _____ * _____ MGD

Start time _____

Sampling location _____ Set up type _____

Night Entry _____

MEN01630

Memo

PAPERBOARD DIVISION

MENASHA CORPORATION

TO: Dave Merkel

FROM: Keith Kling KBK

DATE: October 15, 1993

SUBJECT: MDNR Inspection

==========

On Sept. 21, 1993, the MDNR conducted an inspection of our facility for the purpose of reviewing equipment and facilities. Sampling of outfalls was not undertaken during this inspection. We were found to be in compliance with current regulation, but 3 deficiencies were noted.

1) Additional documentation of time of sampling vs time of setup was requested. This has already been completed.

2) Housekeeping at the waste treatment facility is poor. This is mainly due to the method being used to consolidate tails dumpsters while that system was upgraded. We currently have two contractors quoting on repair and upgrading to the road and associated area. This will allow us to bring in vehicles to clean up the area.

3) The MDNR recommends that our nutrient tanks be inside a containment area and have better labeling. We are investigating costs and determining if our nutrient supplier will share in some of these costs.

Overall, our facility remains in very good shape both from physical and operational standpoints.

cc: Al Switzenberg
Len Myers

KBK/jec

MEN01631

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
RRY DEVUYST
UL EISELE
RDON E GUYER
JAMES P HILL
DAVID HOLLI
O STEWART MYERS
JOEY M SPANO

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

October 12, 1993

Mr. Keith Kling
Menasha Corporation
320 N. Farmer Street
P.O. Box 155
Otsego, Michigan 49078-0155

Dear Mr. Kling:

SUBJECT: September 21, 1993 Compliance Evaluation Inspection

Enclosed you will find the completed evaluation form for the inspection. The following deficiencies were found during our inspection of the treatment facility.

1. The sampling and analysis dates appeared to be covered by one single date on the bench sheets. These should be separate entries even if in fact they are the same dates. This will avoid any confusion in determining sample storage times.

2. Housekeeping in the area of the treatment facilities could be improved.

3. A grey area of interpretation exists with regard to the need for secondary containment of the waste treatment nutrient chemicals. While the Part 5 Rules in Act 245 do not address these chemicals, the wording contained in the permit (Part II A 3) could be interpreted as including them. Therefore, our office recommends that Menasha Corporation consider secondary containment for this chemical storage area. While potential spills may be contained by the present lagoon, the eventual impact upon the river from such an incident would certainly be a liability for Menasha. Proper labeling of these chemicals is a separate issue that should also be addressed.

Please provide a written response to this office, no later than November 20, 1993, indicating the actions Menasha will take to address these issues.

Sincerely,

Steve Norton

Steve Norton
Surface Water Quality Division
616-685-0028

SCN:clm
Enclosure

R 1026-1
2/92

COMPLIANCE EVALUATION INSPECTION CHECKLIST

Facility: Menasha Corporation
Permit No.: MI0003824

SECTION A. PERMIT VERIFICATION

Possible answers: YES, NO, N/A. Add other comments as needed.

Yes INSPECTION OBSERVATIONS VERIFY INFORMATION CONTAINED IN PERMIT

Yes 1. Correct name and mailing address of permittee.

Yes 2. Facility is as described in permit.

N/A 3. Notification has been given to EPA/State of new, different or increased discharges.

N/A 4. Accurate records of influent volume and concentrations are maintained, when appropriate (i.e., net loadings, %removed requirements).

Yes 5. Number and location of discharge points are as described in the permit.

Yes 6. Name and location of receiving waters are correct.

No 7. Facility listed as non-compliant on last QNCR? Reason for non-compliance:

8. Permit expiration date: **10/1/95**

9. Permit scheduled for reissuance: **10/1/95**

10. List dates of noncompliance letters submitted by this facility in the last three months: **None**

11. Facility classification: **A-1b A-2f C-1b**

12. Chief operator certification: **A-1b A-2f C-1b A-1f**

13. Describe any discrepancies with permit.
Note: The next time the permit comes up for renewal, outfalls #00B and #003 should probably be combined. This would simplify facility reporting and DNR review activity.

Section A. Completed by: Steve Norton Date: 9/21/93

Facility: Menasha Corporation
Permit No.: MI0003824

SECTION B. RECORD KEEPING AND REPORTING EVALUATION

Possible answers: YES, NO, N/A. Add other comments as needed.

RECORDS AND REPORTS ARE MAINTAINED AS REQUIRED BY PERMIT

Yes 1. All required information is available, complete and current.

Yes 2. Information is maintained for at least three years.

Yes 3. Analytical results are consistent with the data reported on the DMRs. (Suggestion: Check at least past three months, 5 data points per month).

No 4. Sampling and analyses data are adequate and include:

Yes a. Dates, times, frequency, and location of sampling.

Yes b. Name of individual performing sampling.

Yes c. Results of analyses.

No d. Dates of analyses.
*** The sampling and analysis dates appeared to be covered by one single date on the bench sheets. These should be separate entries even if in fact they are the same dates. This will avoid any confusion.**

Yes e. Name of person performing analyses.

Yes 5. Monitoring records are adequate and include:

Yes a. Flow, pH, D.O., etc. as required by permit.

Yes b. Strip or circular charts are kept for a minimum of three years.

Yes 6. Laboratory equipment calibration and maintenance records are adequate. (see also Section G).

Yes 7. Plant Operation & Maintenance Records are adequate* and include: (see also Section I)

Yes a. O & M Manual.

Yes b. "As-built" engineering drawings of wastewater treatment units.

Yes c. Schedules and dates of equipment maintenance and repairs.

Yes d. Equipment supplies manuals.

Yes 8. SPCC/PIPP required?

Yes a. Available for inspection?

Yes b. Is PIPP on file with DNR?

c. Date of last revision: **March 1993 Currently Revising**

* Required for facilities built with Federal construction grant funds or by permit.

Section B. completed by: Steve Norton Date: 9/21/9_

Facility: Menasha Corporation
Permit No.: MI0003824

SECTION C. FACILITY SITE REVIEW

Possible answers: YES, NO, N/A. Add other comments as needed.

Yes 1. Facility handles and disposes of sludge according to applicable Federal, State and local regulations.

Yes 2. All treatment units, other than backup units, are in service. If no, which units are not in service:

Yes 3. Operating schedules are established.
No. of shifts in operation: 3 (industrial)
No. of shifts waste treatment in operation: 3
No. of shifts waste treatment system is staffed: 1

No 4. Any bypassing since last inspection. If yes, give date of bypass:

and date of notification to DNR:

No 5. Hydraulic and/or organic overloads are experienced.

If yes give reasons. Are these due to infiltration/inflow, combined sewage, pump sizing?

6. Facility flow rates:

Municipality

Previous year's average daily rate: MGD
Historical peak dry weather rate: MGD
Historical peak wet weather rate: MGD

Industry

Average Flow Rates (MGD)

	Process Water	Non-contact Cooling Water	Sanitary Flow	Total Flow
Outfall #001		0.125		0.125
Outfall #003	2.00			2.00
Outfall #				
Outfall #				
Outfall #				

Yes 7. Flow measurement devices are properly installed and maintained.

Yes 8. Flow is measured at proper locations.

N/A a. Influent flow is measured before all return lines.

Yes b. Effluent flow is measured after all return lines.

N/A 9. For municipality: Population currently served:

For industry: Number of employees currently working: **230**

10. Water supply, wastewater treatment - list any changes from most recent inspection and CSI. **None**

11. Industrial inspections only: For manufacturing operations which contribute wastewater, list any changes from most recent inspection. **None**

No 12. Any citizen complaints or PEAS reports received since last inspection? If yes, list date and nature of complaint.

Section C. completed by: Steve Norton Date: 9/21/

Facility: Menasha Corporation
Permit No.: MI0003824

SECTION D. COMPLIANCE SCHEDULE STATUS REVIEW

Possible answers: YES, NO, N/A. Add other comments as needed.

N/A THE PERMITTEE IS MEETING THE COMPLIANCE SCHEDULE FOR CONSTRUCTION ACTIVITIES.

Yes THE PERMITTEE IS MEETING THE COMPLIANCE SCHEDULE FOR PERMIT CONDITIONS.

N/A 1. The permittee has obtained necessary approvals to begin construction.

N/A 2. Financing arrangements are complete.

N/A 3. Contracts for engineering services have been executed.

N/A 4. Design plans and specifications have been completed.

N/A 5. Construction has begun.

N/A 6. Construction is on schedule.

N/A 7. Equipment acquisition is on schedule.

N/A 8. Construction has been completed.

N/A 9. Start-up has begun.

N/A 10. The permittee has requested an extension of time.

11. Other Permit Schedule Items	Due	Submitted	Approved
Toxic Substance Monitoring Report:	6/2/92	6/29/92	Yes
Program for Effective Residual Management:	3/31/91	3/31/91	Yes
Demonstration Study:			
Short Term Wastewater Quality Study:	7/11/91	7/11/91	Yes
Bioassay:			
Chlorine Study:			
Alternate Power Source Report:			
Other:			

Section D. completed by: Steve Norton Date: 9/21/9

Facility: Menasha Corporation
Permit No.: MI0003824

SECTION I. (INDUSTRIAL) OPERATION AND MAINTENANCE FOR INDUSTRIAL WASTE WATER TREATMENT PLANTS

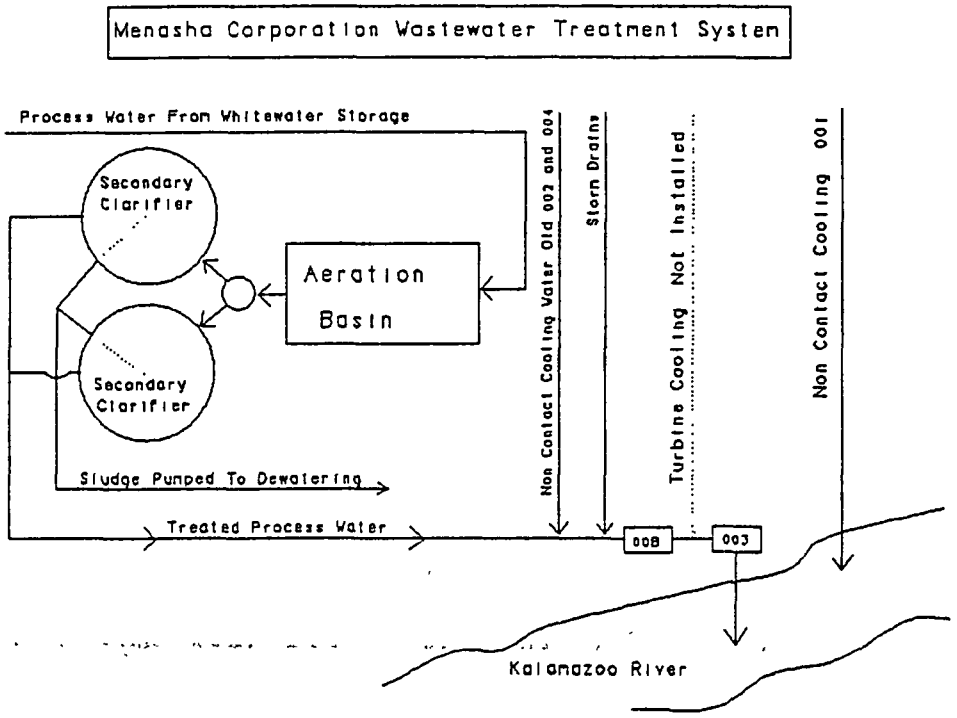
1. Type of water sent to waste treatment unit.
   a. Process [X] Boiler Blow Down [X] Non Contact [ ] Storm Water [ ] Contact Cooling [ ] Other [ ]
   b. Short description of industry operation: (use back if necessary) **Integrated corrugating medium production with semichemical pulping and secondary fiber utilization.**

   (i) Raw materials used **Wood Chips, Recycled Boxboard**
   (ii) Critical materials used _____
   (iii) Product **Corrugating Medium**
   (iv) Has industry made changes in production processes or water usage since last inspection? **No**

2. Date present waste water treatment plant began operating. **1970**

3. Flow diagram of treatment unit, if changed since last inspection.

4. Provide current flow diagram.



5. Receiving waters **Kalamazoo River**

6. Flows

a. Current plant discharge 2.04 MGD

Outfall #003 (i) Treated process water 2.04 MGD

Outfall #001 (ii) Non contact cooling water 0.559 MGD

(iii) Contact cooling water Included in 003 MGD

(iv) Boiler blow down Included in 003 MGD

(v) Storm water Included in 003 MGD

(vi) Sanitary _____ MGD

(vii) Which of the above are discharged to the municipal waste water system? **Sanitary**

b. Permit limits

Outfall #003 (i) Treated process water 9.955 MGD

Outfall #001 (ii) Non contact cooling water 0.600 MGD

(iii) Contact cooling water Included in 003 MGD

(iv) Boiler blow down Included in 003 MGD

(v) Storm water Included in 003 MGD

c. Annual average daily rate 2.125 MGD

No d. Hydraulic and/or organic overloads experienced.

7. Pump Stations

a. How many 2

b. Locations 1. To Pond Design Flow 1800 GPM Actual 800 GPM

2. To Clar. Design Flow 2000 GPM Actual 765 GPM

3. _____ Design Flow _____ Actual Flow _____

N/A 8. Adequate alarm system for power or equipment failure exists.
Not needed due to the excess storage capacity of the aeration lagoon and the fact the mill would shut down during a power failure.

Yes 9. Standby power or other equivalent provision provided.
Standby Pumps

No 10. Written procedures for facility operation and maintenance readily available.
While no written procedures exist, there are five trained operators to rely upon. Facility maintenance is covered by general preventative maintenance procedures.

N/A a. Are the above procedures current?

b. Procedures include:

N/A (i) Operating report

N/A (ii) Work schedule

N/A (iii) Activity Report

Yes 11. Maintenance tasks are performed on time.

Yes 12. Adequate time is allowed for preventive maintenance.

Yes 13. Up to date records are kept of maintenance repairs and replacements, maintenance costs.

Yes 14. An inventory is kept of spare parts.

Yes 15. As built drawings, shop drawings, construction specifications, major equipment specifications are readily available.

Yes 16. Operation and maintenance manual available.

Yes 17. Adequate numbers of qualified operators on hand to operate the waste treatment system.
8 hours each day
7 days a week

18. Facility classification A-1b A-2f C-1b

19. Chief operator's level of certification A-1b A-2f C-1b A-1f

Yes 20. Established procedures available for training new operators.

Yes 21. Does a contingency plan for treatment upsets, power failures, floods, etc. exist?
Yes a. Is above plan known and available to all shifts?
Yes b. Is above plan explained to new employees?

Yes 22. Does the industry have a pollution incident prevention plan approved by the DNR?

No 23. Any problems in operation of chemical feed systems? If yes, explain _____

GENERAL OBSERVATIONS DURING WALK THROUGH

1. Any odors in: (If yes explain)
No a. Wet wells
No b. Around aerobic and anaerobic biological units
No c. Pits
No d. Sludge Handling facilities
No e. Treatment tanks
No f. Any odor complaints beyond property?
g. How was complaint handled?

No 2. Evidence of surcharging of influent lines, overflow weirs, and/or other structures? If yes, explain.

No 3. Accumulation of solids and grease in wet wells.

No 4. Excessive build up of grease, foam, or floating material in clarifiers. If yes, explain.

Yes 5. Any discoloration puddles, grit, oil on ground around units. If yes, explain.
Some sludge was present on the ground around the clarifiers. This was due to repiping activities.

No 6. Are there excessive suspended solids, turbidity, foam, grease, scum, unusual color in plant effluent?

No 7. Any treatment units currently out of service?
a. What unit(s)? _____
b. How long out of service? _____
c. Type of failure _____
N/A d. Dated tag _____
e. When will it be back in service? _____

No 8. Any "jury-rigged" systems to correct operational problems. If yes, explain. _____

9. Proper storage of chemicals and/or hazardous substances. **Note: A grey area exists with regard to the need for secondary containment of the waste treatment nutrient chemicals. While the Part 5 Rules in Act 245 do not address these chemicals, the wording contained in the permit (Part II A 3) could be interpreted as including them. Therefore, our office recommends that Menasha Corporation consider secondary containment for this chemical storage area. While potential spills may be contained by the present lagoon, the eventual impact upon the river from such an incident would certainly be a liability for Menasha Corporation.**

10. Diking adequate around storage tanks.
See comment above.

No 11. Labeling of chemicals adequate.

No 12. Evidence of chemical materials or oil leaks in storage areas, transfer lines, or feed locations. If yes, explain. _____

13. Describe the general appearance (housekeeping) of units and buildings **While the general appearance of the buildings and treatment units is good, the area around the aeration basin and clarifiers is cluttered and needs some improved housekeeping. Part of this problem may be due to some below grade re-piping occurring near the clarifiers.**

No 14. Alternate discharge points not noted in permit are being used. If yes, explain.

Section D. completed by: Steve Norton Date: 9/21/99

MEN01643

KBK

PAPERBOARD DIVISION

MENASHA CORPORATION

September 24, 1993

Mr. Steve Norton
Michigan Dept. of Natural Resources
621 N. 10th Street
Plainwell, MI 49080

Dear Steve,

I am writing to update the District on changes made to our process since our last CEI inspection conducted in 1989. This is in response to Section C, question 11 of the CEI questionnaire.

In 1991 our mill completed an upgrade of our facilities which increased our daily tonnage. At this time our daily production is between 650 and 700 tons per day. The production increase was obtained through equipment additions at our boxboard recycling facility, essentially doubling its capacity, and through modifications to our #1 machine. The higher production levels necessitated increases in water usage and therefore, modifications to our waste treatment system. Following submission of plans to District MDNR, the following modifications were made to the waste treatment system.

* A second influent line from the mill to the aerated lagoon was installed to ensure spills to the river would not occur.

* Four additional aerators were installed in the aerated lagoon to ensure aerobic pond conditions.

* A 60 foot clarifier was installed in conjunction with the existing 40 foot clarifier. This was placed in the east polishing pond which was decommissioned.

* A new weir building was installed at the site of the existing 003 outfall.

* Consolidation of our 5 permitted weirs took place as follows.

    1) 002 - Vacuum Pump water and other non-contact water was rerouted to the head of the new weir building.

    2) 004 - Powerhouse non-contact water was rerouted to the head of the new weir building.

Otsego Mill
120 N Farmer St
PO Box 155
Otsego MI 49078-0155
616-692-6141
616-692-2060 (Fax)

PAPERBOARD DIVISION

MENASHA CORPORATION

3) 003-5 - Electric generating turbine cooling water was eliminated. This was originally to be routed down stream of the new weir building in its discharge pipe entering the river.

For clarification, the weir which composites 000 (Aerated lagoon discharge), 002 and 004 is designated as 00B. The pipe going to the river is designated as 003. Attached is a flow diagram of our system including the turbine cooling water in dotted line since it is out of service.

If you have further questions concerning this matter feel free to call me at 692-6141.

Sincerely,

Keith B. Kling

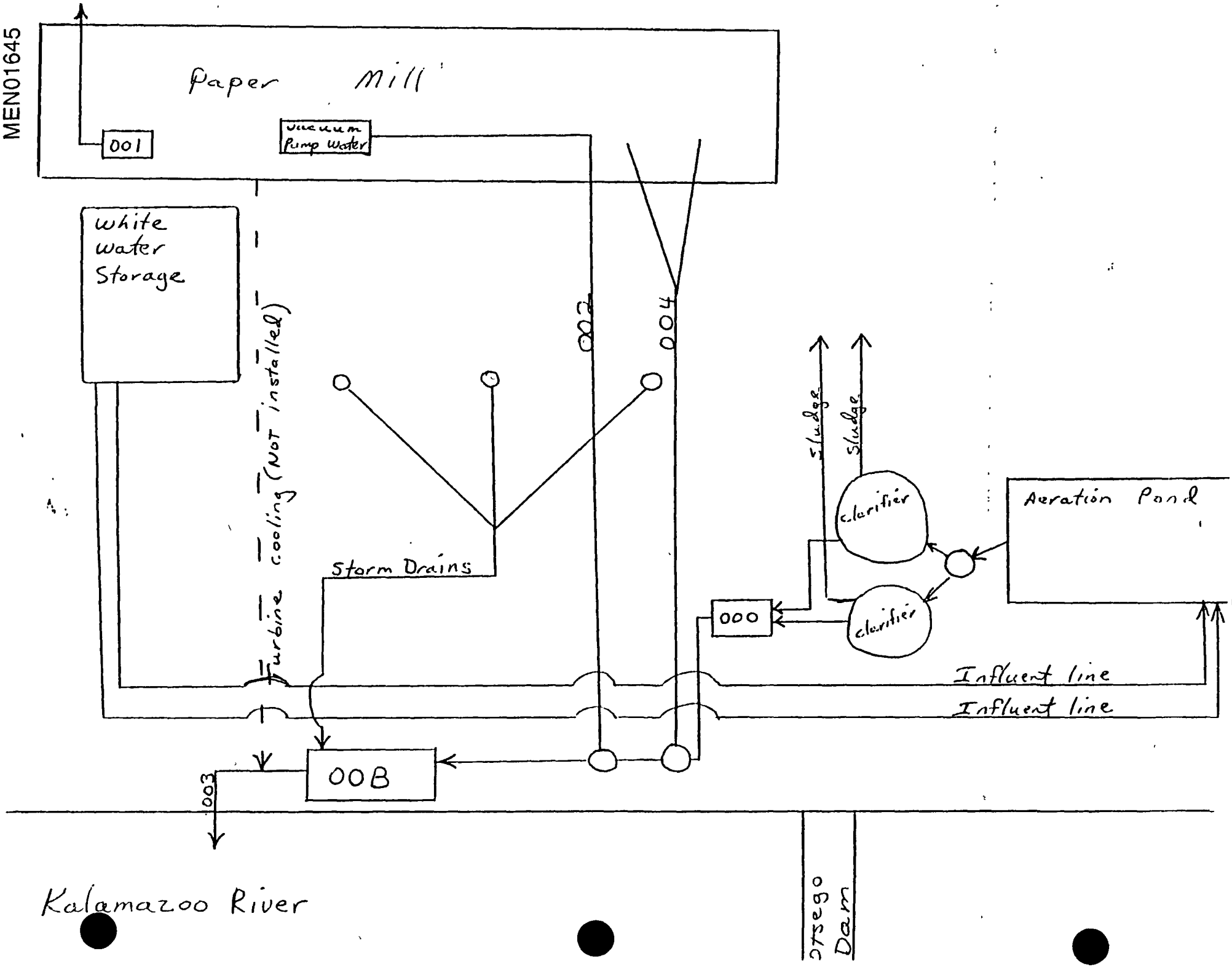
Keith B. Kling
Environmental Supervisor

cc/Dave Merkel
Pete DeRossi

KBK/jec

Otsego Mill
320 N Farmer St
PO Box 155
Otsego MI 49078 0155
1-616-692-6141
1-616-692-2060 (Fax)

MEN01645


Paper Mill
001
Vacuum Pump Water
White Water Storage
Turbine cooling (Not installed)
002
004
Storm Drains
Sludge
Sludge
clarifier
clarifier
Aeration Pond
000
Influent line
Influent line
00B
003
Kalamazoo River
Otsego Dam

MEN01646

PAPERBOARD DIVISION

MENASHA CORPORATION

November 19, 1993

Mr. Steve Norton
Michigan Dept. of Natural Resources
District 12 Headquarters
P.O. Box 355
Plainwell, MI 49080

Dear Steve:

I have reviewed your comments from the Sept. 21, 1993 Compliance Evaluation Inspection and offer the following solutions to the noted deficiencies.

1. Sampling and analysis dates appeared to be covered by one single date on the bench sheets. These should be separate entries even if in fact they are the same dates. This will avoid any confusion in determining sample storage times.

   - This has been resolved by adding areas on the bench sheets where dates and initials can be entered. For the BOD 5 test, a setup date and final test date are noted.

2. Housekeeping in the area of the treatment facilities could be improved.

   - At the time of your inspection our mill had just completed installation of a new compactor. While this work was being done, an unusual amount of traffic and equipment was at the waste treatment area. This work is now complete. The waste treatment driveway has received some grading and drive improvements are scheduled for 1994.

3. A grey area of interpretation exists with regard to the need for secondary containment of the waste treatment nutrient chemicals. While the Part 5 Rules in Act 245 do not address these chemicals, the wording contained in the permit (Part II A 3) could be interpreted as including them. Therefore, our office recommends that Menasha Corporation consider secondary containment for this chemical storage area. While potential spills may be contained by the present lagoon, the eventual impact upon the river from such an incident would certainly be a liability for Menasha. Proper labeling of these chemicals is a separate issue that should also be addressed.

Otsego Mill
320 N Farmer St
PO Box 155
Otsego MI 49078 0155
1-616-692-6141
1-616-692-2060 (Fax)

- While a grey area, Menasha also views with concern any circumstance which could impact the river. We have contacted our nutrient supplier and they have agreed to supply tanks with containment tubs. Proper labeling will be displayed on each tank. We are currently constructing a gravel base to set these units on and expect the systems to be in place by the end of the year.

If you have any questions on this matter, feel free to call me at 692-6141.

Sincerely,

Otsego Paperboard Division

Keith B. Kling

Keith Kling
Environmental Supervisor

KBK/alp

cc: John Bonham
Dave Merkel
Al Switzenberg
Len Myers
Pete DeRossi

MEN01648

STATE OF MICHIGAN

NATURAL RESOURCES
COMMISSION
ERRY C BARTNIK
RRY DEVUYST
UL EISELE
AMES P HILL
DAVID HOLLI
JOEY M SPANO
JORDAN B TATTER

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

November 9, 1994

Mr. Keith Kling
Menasha Corporation
320 N. Farmer Street
P.O. Box 155
Otsego, Michigan 49078-0155

Dear Mr. Kling:

SUBJECT: September 19, 1994 Compliance Sampling Inspection Menasha Corp. MI0003824 (Questionnaire Portion)

Enclosed you will find a copy of the checklist completed for the above mentioned inspection. The results of this portion of the inspection show that your facility is performing quite well. I will be forwarding you the analytical data from our point source monitoring when they become available.

If you have any further questions please feel free to call.

Sincerely,

Steve Norton

Steve Norton
Surface Water Quality Division
616-685-0028

SCN:clm

Enclosure

Facility Menasha Corp.
Permit No. MI0003824

SECTION B. RECORD KEEPING AND REPORTING EVALUATION

Possible answers: YES, NO, N/A. Add other comments as needed.

RECORDS AND REPORTS ARE MAINTAINED AS REQUIRED BY PERMIT

Yes 1. All required information is available, complete and current.

Yes 2. Information is maintained for at least three years.

Yes 3. Analytical results are consistent with the data reported on the DMRs. (Suggestion: Check at least past three months, 5 data points per month).

Yes 4. Sampling and analyses data are adequate and include:

Yes a. Dates, times, frequency, and location of sampling.

Yes b. Name of individual performing sampling.

Yes c. Results of analyses.

Yes d. Dates of analyses.

Yes e. Name of person performing analyses.

Yes 5. Monitoring records are adequate and include:

Yes a. Flow, pH, D.O., etc. as required by permit.

Yes b. Strip or circular charts are kept for a minimum of three years.

Yes 6. Laboratory equipment calibration and maintenance records are adequate. (see also Section G).

Yes 7. Plant Operation & Maintenance Records are adequate* and include: (see also Section I)

Yes a. O & M Manual.

Yes b. "As-built" engineering drawings of wastewater treatment units.

Yes c. Schedules and dates of equipment maintenance and repairs.

es d. Equipment supplies manuals.

Yes 8. SPCC/PIPP required?

Yes a. Available for inspection?

Yes b. Is PIPP on file with DNR?

c. Date of last revision: **February 1994**

* Required for facilities built with Federal construction grant funds or by permit.

Section B. completed by: Steve Norton Date: 9-19-94

Facility Menasha Corp.
Permit No. MI0003824

SECTION C. FACILITY SITE REVIEW

Possible answers: YES, NO, N/A. Add other comments as needed.

Yes 1. Facility handles and disposes of sludge according to applicable Federal, State and local regulations.

No 2. All treatment units, other than backup units, are in service. If no, which units are not in service: **One clarifier is not being used presently but is serviceable.**

Yes 3. Operating schedules are established.
No. of shifts in operation: 3 (industrial)
No. of shifts waste treatment in operation: 3
No. of shifts waste treatment system is staffed: 1

No 4. Any bypassing since last inspection. If yes, give date of bypass:

and date of notification to DNR:

5. Hydraulic and/or organic overloads are experienced.

If yes give reasons. Are these due to infiltration/inflow, combined sewage, pump sizing?

6. Facility flow rates:

Municipality

Previous year's average daily rate: MGD
Historical peak dry weather rate: MGD
Historical peak wet weather rate: MGD

Industry

Average Flow Rates (MGD)

	Process Water	Non-contact Cooling Water	Sanitary Flow	Total Flow
Outfall #003	**1.15**	**0.55**		**1.7**
Outfall #001		**0.15**		**0.15**
Outfall #				

es 7. Flow measurement devices are properly installed and maintained.

Yes 8. Flow is measured at proper locations.

N/A a. Influent flow is measured before all return lines.

Yes b. Effluent flow is measured after all return lines.

9. For municipality: Population currently served:

For industry: Number of employees currently working: **238**

10. Water supply, wastewater treatment - list any changes from most recent inspection and CSI. **New belt filter press for sludge dewatering. Filtrate is sent to treatment plant.**

11. Industrial inspections only: For manufacturing operations which contribute wastewater, list any changes from most recent inspection. **No**

No 12. Any citizen complaints or PEAS reports received since last inspection? If yes, list date and nature of complaint.

Section C. completed by: Steve Norton Date: 9-19-94

Facility Menasha Corp.
Permit No. MI0003824

SECTION E. FLOW MEASUREMENT INSPECTION CHECKLIST

Part I. General (also found in Section C)

Possible answers: YES, NO, N/A. Add other comments as needed.

Yes 1. Primary flow measuring device is properly installed and maintained. Name primary device Weir.
Design flow 5 MGD.

Yes 2. Flow records are properly kept. All strip or circular charts maintained by the permittee for >3 years.

Yes 3. Sharp drops or increases in flow values are accounted for.

Yes 4. Flow is measured at appropriate locations.

N/A a. Influent flow is measured before all return lines.

Yes b. Effluent flow is measured after all return lines.

Yes 5. Secondary instruments water level indicators (totalizers, recorders, etc.) are properly operated and maintained.
Date of last calibration 7/1/94.

Yes 6. Spare parts are stocked.

Part II. Flumes

N/A 1. Flow entering flume appears reasonably well distributed across the channel and free of turbulence, boils, or other distortions.

N/A 2. Cross-sectional velocities at entrance are relatively uniform.

N/A 3. Flume is clean and free of debris or deposits.

N/A 4. All dimensions of flume are accurate.

N/A 5. Side walls of flume are vertical and smooth.

N/A 6. Sides of flume throat are vertical and parallel.

N/A 7. Flume head is being measured at proper location.

N/A 8. Measurement of flume head is zeroed to flume crest.

N/A 9. Flume is proper size to measure range of existing flow.

N/A 10. Flume is operating under free-flow conditions over existing range of flows.

11. How were the above determinations made by the inspector?
[ ] Visual Observation [ ] Actual Measurements

Part III. Weirs

1. What type of weir is being used? **Rectangular**

Yes 2. The weir is exactly level.

Yes 3. The weir plate is plumb and its top edges are sharp and clean.

Yes 4. There is free access for air below the nappe of the weir.

Yes 5. Upstream channel of weir is straight for at least four times the depth of water level, and free from disturbing influences. **Not Physically Measured**

Yes 6. The stilling basin of the weir is of sufficient size and clear of debris.

Yes 7. Head measurements are properly made by the facility personnel.

Yes 8. Is weir type appropriate for flow volume.

9. How were above determinations made?
[X] Visual Observation [ ] Actual Measurements

Part IV. Other Flow Devices

1. Type of flow meter used: _____

2. List any problems the operator has had with the flowmeter:

_____

3. Measured wastewater flow: ____ MGD; Recorded flow: ___ MGD; Error ____ %

4. Design flow: _____ MGD.

N/A 5. Flow totalizer is properly calibrated. Date last calibrated _____

6. Frequency of routine inspection by proper operator: ___/day

7. Frequency of maintenance inspections by plant personnel: _____

8. Frequency of flow meter calibration: _____
Date of last calibration: _____

N/A 9. Flow measurement equipment adequate to handle expected ranges of flow rates.

N/A 10. Venturi meter is properly installed and calibrated.

N/A 11. Electromagnetic flowmeter is properly calibrated.

Section E. completed by: Steve Norton Date: 9-19-94

Facility **Menasha Corp.**
Permit No. **MI0003824**

SECTION F. PERMITTEE SAMPLING INSPECTION CHECKLIST

Possible answers: YES, NO, N/A. Add other comments as needed.

Yes 1. Samples are taken at sites specified in permit.

Yes 2. Locations are adequate for representative samples.

Yes 3. Flow proportioned samples are obtained where required by permit.

Yes 4. Sampling and analyses completed on parameters specified by permit.

Yes 5. Sampling analyses done at frequency specified by permit.

Yes 6. Permittee is using methods of sample collection required by permit.
Required Method: **Flow Proportioned** If not, method being used is: [ ] Grab [ ] Manual Composite [ ] Automatic Composite

Yes 7. Sample collection procedures are adequate:
Yes a. Samples refrigerated during compositing
Yes b. Proper preservation techniques used
Yes c. Containers and sample holding times conform to 40 CFR 136.3

8. List preservation techniques, containers, and holding times by parameter.

Parameters	Preservation	Container Used	Holding Time
Cu	**HNO3**	**Plastic**	**<28 Days**
Zn	**HNO3**	**Plastic**	**<28 Days**
Total P	**H2SO4**	**Plastic**	**<28 Days**
pH	**None**	**None**	**None**
BOD5	**Cool**	**Plastic**	**<2 Days**
TSS	**Cool**	**Plastic**	**<2 Days**
Ortho. P	**Cool**	**Plastic**	**<2 Days**

No 9. Monitoring and analyses are performed more often than required by permit.

If so, results reported in permittee's self-monitoring report.
List parameters:

Section F. Completed By: Steve Norton Date: 9-19-94

Facility Menasha Corp.
Permit No._____

SECTION G. LABORATORY

Possible answers: YES, NO, N/A. Add other comments as needed.

METHODS/INSTRUMENTATION

Yes 1. Are analyses done on site?

Yes 2. Is a commercial laboratory used? Yes If yes:
How often Weekly
What parameter(s) Zn,Cu,Ortho.P,Total P
Name of laboratory W.MI.Environmental
Address 3352 128th Ave. Holland, MI 49424
Contact person Tom Beamish
Telephone number 616-399-6070
Are samples properly preserved? Yes
Does lab have chain of custody procedures? Yes
Does lab have QA/QC program? Yes

3. Analytical methods used: (refer to 40 CFR 136)

Approved Method? Yes	No	Parameter	Method Used	Comments
[X]	[ ]	Cu	ICP R19-200.7	
[X]	[ ]	Zn	ICP R19-200.7	
[X]	[ ]	Total P	R74-4500 E	
[X]	[ ]	pH	DNR Manual	
[X]	[ ]	BOD5	DNR Manual	
[X]	[ ]	TSS	DNR Manual	
[X]	[ ]	Ortho P	R74-4500 E	
[ ]	[ ]			

N/A 4. Proper approval has been obtained for alternate methods.

Yes 5. Facility has written procedures for methods. **DNR Manual**

Yes 6. Facility has written procedures for instrument and equipment use. **Manufacturer's Manual**

7. Instrument calibration methods:

Calibration Adequate? Yes	No	Instrument	Date Last Calibration Technique	Frequency/Calibrated
[X]	[ ]	pH	2 Buffer	Daily
[X]	[ ]	DO	Winkler	Daily
[X]	[ ]	Balance	Service Rep.	Once Per Year
[ ]	[ ]			
[ ]	[ ]			

Yes 8. Instrument calibration records are maintained.
If yes, how long are records maintained? >3 Years

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Yes 1. QA/QC procedures are used.

Yes 2. A written QA/QC manual is available to lab personnel.

Yes 3. QA/QC results are properly recorded.

Yes 4. Laboratory log books (Equipment Temperature, Maintenance, Reagents, Daily Log) are maintained.

No 5. Precision and accuracy data are generated, recorded, and plotted to determine whether valid, questionable, or invalid data are being generated from day-to-day. If yes, how often?

6. QA/QC methods used:

Parameter	Sample Blanks	Replicate Samples	Spiked Samples	Stds/Ref Samples	EPA/DMR Study	Inter/ Intra Lab Check	% Of Total
BOD5	[X]	[X]	[ ]	[ ]	[X]	[ ]	[ ]
TSS	[ ]	[X]	[ ]	[ ]	[X]	[ ]	[ ]
*Ortho P	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
*Total P	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
pH	[ ]	[ ]	[ ]	[X]	[X]	[ ]	[ ]
*Zn	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
*Cu	[ ]	[ ]	[ ]	[ ]	[X]	[ ]	[ ]
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Comments: *** Performed by outside lab.**

7. If facility laboratory participates in EPA DMR/QA program. results from last round:

Acceptable Result Yes	No	Parameter	Lab Result	Actual Level
[X]	[ ]	Cu	62.1 ug/l	62.0 ug/l
[X]	[ ]	Zn	1169 ug/l	1100 ug/l
[X]	[ ]	pH	8.68	8.70
[X]	[ ]	TSS	38 mg/l	43.2 mg/l
[X]	[ ]	Total P	2.82 mg/l	3.20 mg/l
[X]	[ ]	Ortho P	0.82 mg/l	0.83 mg/l
[X]	[ ]	BOD5	12 mg/l	14 mg/l
[X]	[ ]	TRC	0.48 mg/l	0.729 mg/l

LABORATORY DATA HANDLING

Yes 1. Adequate bench sheets are used for each analysis.

Yes 2. Calculation methods are correct and clearly stated.

Yes 3. Significant figures are established for each analysis.

Yes 4. Data are reported in proper form and units.

Yes 5. Laboratory records (calibration logs, bench sheets, monthly reports, etc.) are kept available for review for at least three years.

Yes 6. Data handling quality control measures are used to minimize transcription and other data handling errors.

LABORATORY EQUIPMENT/PERSONNEL

Yes 1. Instruments and equipment appear to be in good condition.
Comment:_____

Yes 2. Written maintenance schedule/record is maintained.

Yes 3. Proper volummetric glassware is used.

Yes 4. Glassware is properly cleaned and sterilized, if necessary.

Yes 5. A reagent log is kept recording dates of delivery or preparation and shelf life.

Yes 6. Standards and reagents are properly discarded when their recommended shelf life has expired.

Yes 7. Laboratory wastes are properly disposed.

Yes 8. Written procedures exist for spill clean-up and hazard response methods.

9. Analyst(s) training:

Analyst(s) Name(s)	A. Switzenberg	Gary Roys	Len Myers
Years Experience	30	22	5
Education	HS	BS	2 Yrs.Col.
Special Training	DNR Training	DNR Training	
Licenses/Certifications	A1b A2f C1b	A1b A2f C1b	A1b A2f C1b

Section G. Completed By: Steve Norton Date: 9-19-94

Facility **Menasha Corp.**
Permit No. **MI0003824**

SECTION H. COMPLIANCE SAMPLING INSPECTION PROCEDURES/OBSERVATIONS

Observations	Outfalls 00B	001	003	___
Sampling				
Wastewater Type: Process (P) Sanitary (S) Cooling (C)	P	C	P&C	
Number of grabs obtained:	2	2	2	
Composite sample obtained: Time (T) Flow (F)	T	T	T	
Proper sampling duration (hrs)	24	24	24	
Sample obtained from - DNR sampler Facility samples				
Grab (G) Composite (C) Sample Split With Facility	G	G	G	
Visual Observations				
Oil Sheen Present	No	No	No	
Turbidity	No	No	No	
Visible Foam	No	No	No	
Floating Solids	No	No	No	
Color	Normal		Normal	
Other Observations				

Section H. completed by: Steve Norton Date: 9-19-94

MEN01662

NATURAL RESOURCES
COMMISSION
ERRY C BARTNIK
ARRY DEVUYST
AUL EISELE
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JOEY M SPANO
JORDAN B TATTER

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

December 15, 1994

Mr. Keith Kling
Menasha Corporation
320 N. Farmer St.
P.O. Box 155
Otsego, Michigan 49078-0155

SUBJECT: Point Source Monitoring Report for Sampling Performed on 9/19/94 at Menasha Corporation MI0003824

Dear Mr. ~~Kling~~ Keith:

Enclosed you will find analyses results for the sampling performed at your facility on September 19, 1994. As standard practice, I have forwarded a copy of the data to our Water Quality Unit for their evaluation. If they have any comments or recommendations concerning the data, I will forward those to you when I receive them.

Sincerely,

Steve Norton

Steve Norton
Surface Water Quality Division
616-685-0028

SCN:clm

Enclosure

PRINTED ON RECYCLED PAPER

MEN01663

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Wastewater Survey
Conducted at
Menasha Corporation
All Outfalls No. 030019
NPDES No. MI0003824
Allegan County
Otsego, MI
09/19/94

RECEIVED
DEC 12 1994
SWQD - PLAINWELL

SURVEY SUMMARY

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, September 19, 1994.

The results of this survey are compared to the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0003824, in Table 4.

The results of this survey are compared to the results reported by the facility in their September Discharge Monitoring Report (DMR) in Table 4.

A grab sample from each outfall was split with the facility to compare laboratory analyses. The results are shown in Table 5.

The results of this survey are compared to the results of the previous survey performed in August, 1992 in Table 6.

The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scan analyses are presented in Table 3.

Menasha Corporation

SURVEY PROCEDURE

The flows and samples were obtained as follows:

Sample Location	Flow Measurement	Sampling Methods
030138 (001) Samples collected at company weir.	DMR value.	Submergible composite sampler and individual grab samples.
030053 (003) Samples collected at company weir.	DMR value.	Submergible composite sampler and individual grab samples.

A submergible sampler obtains samples at a continuous rate.

An individual grab is a single instantaneous sample.

Samples were analyzed by the MDNR Environmental Laboratories located in Lansing.

Samples were preserved according to Table 7. The results of the physical and chemical analyses are presented in Tables 1 & 2. The results of the organic scans are presented in Table 3. Letter codes for laboratory results are defined in Table 7.

Menasha Corporation

TABLE 1 - Analyses of Composite Samples

Outfall	030138 (001)		030053 (003)		
Survey Period From	09/19/94 0850		09/19/94 0920		
To	09/20/94 0850		09/20/94 0920		
Computed Flow Rate	.22 MGD		1.8 MGD		
	mg/l	lbs/day	mg/l	lbs/day	
Suspended Solids	<4	NA	110	1651	
Dissolved Solids	350	642	1100	16513	
BOD-5	<2	NA	37	555	
TOC	1.8	3	140	2102	DM
Nitrite	<.01	NA	.07	1	DM
NO3 + NO2	.33	1	<.05	NA	DM
NH3	.13	0	.07	1	DM
Kjeldahl Nitrogen	.2	0	7.2	108	
Total Phosphorus	.4	1	1.3	20	
Ortho Phosphate	.04	0	.34	5	DM
Total Cyanide	<.005	NA	.018	0	
Amenable Cyanide	FCN	NA	FCN	NA	
Alkalinity (as CaCO3)	203	NA	609	NA	
Conductivity (umho/cm)	589	NA	1347	NA	
Hardness (as CaCO3)	250	NA	250	NA	
Calcium	67	123	70	1051	
Chloride	34	62	53	796	
Magnesium	20	37	18	270	
Sulfate	24	44	66	991	
Sulfide	<.02	NA	<.15	NA	DM,PI
	ug/l	lbs/day	ug/l	lbs/day	
Phenolics	<10	NA	220	3.303	
Total Cadmium (Cd)	<.2	NA	.6	.009	
Total Chromium (Cr)	<1	NA	2.6	.039	
Total Copper (Cu)	5.1	.009	14	.210	
Total Lead (Pb)	<1	NA	4.9	.074	
Total Nickel (Ni)	<2	NA	4.9	.074	
Total Zinc (Zn)	<4	NA	80	1.201	
Total Iron (Fe)	460	.844	1200	18.014	
Total Aluminum (Al)	<50	NA	1100	16.513	
Total Mercury (Hg)	<.2	NA	<.2	NA	
Total Selenium (Se)	<1	NA	<1	NA	
Total Arsenic (As)	<1	NA	5.6	.084	
Total Silver (Ag)	<.5	NA	<.5	NA	
Total Molybdenum (Mo)	<25	NA	<25	NA	
Total Antimony (Sb)	<1	NA	1.2	.018	
Hexavalent Chromium (Cr+6)	<5	NA	6	.090	
Total Barium (Ba)	77	.141	160	2.402	
Total Beryllium (Be)	<1	NA	<1	NA	
Total Cobalt (Co)	<15	NA	<15	NA	
Total Lithium (Li)	<8	NA	<8	NA	
Total Manganese (Mn)	78	.143	190	2.852	
Total Titanium (Ti)	<10	NA	17	.255	
Total Vanadium (V)	<10	NA	10	.150	

Menasha Corporation

TABLE 2 - Analyses of Grab Samples

Outfall	030138 (001)	030138 (001)
Matrix	water	water
Date Collected	09/19/94	09/19/94
Time Collected	0855	1905
Temperature (F)	71	81
pH (S.U.)	7.2	7.3
Chlorine (Cl) (mg/l)	<0.01	<0.01
Dissolved Oxygen (mg/l)	4.2	3
Suspended Solids (mg/l)	<4	<4
Dissolved Solids (mg/l)	340	340
BOD-5 (mg/l)	<2	<2
TOC (mg/l)	1.5	1.4
Nitrite (mg/l)	<.01	<.01
NO3 + NO2 (mg/l)	.33	.32
NH3 (mg/l)	.11	.13
Kjeldahl Nitrogen (mg/l)	.27	.25
Total Phosphorus (mg/l)	.41	.39
Ortho Phosphate (mg/l)	.04	.04
Alkalinity (as CaCO3)	204	206
Hardness (as CaCO3)	240	245
Conductivity (umho/cm)	591	582
Calcium (mg/l)	64	65
Chloride (mg/l)	35	34
Sulfate (mg/l)	28	26
Magnesium (mg/l)	20	20
Oil & Grease (grav) (mg/l)	<10	<10
	ug/l	ug/l
Total Cadmium (Cd)	<.2	<.2
Total Chromium (Cr)	<1	<1
Total Copper (Cu)	33	50
Total Nickel (Ni)	<2	<2
Total Lead (Pb)	<1	<1
Total Zinc (Zn)	9	5
Hexavalent Chromium (Cr+6)	<5	<5
Total Aluminum (Al)	<50	<50
Total Arsenic (As)	<1	<1
Total Iron (Fe)	790	740
Total Mercury (Hg)	<.2	<.2
Total Silver (Ag)	<.5	<.5
Total Selenium (Se)	<1	<1
Total Molybdenum (Mo)	<25	<25
Total Antimony (Sb)	<1	<1
Total Barium (Ba)	78	79
Total Beryllium (Be)	<1	<1
Total Cobalt (Co)	<15	<15
Total Lithium (Li)	<8	<8
Total Manganese (Mn)	97	84
Total Titanium (Ti)	<10	<10
Total Vanadium (V)	<10	<10

Menasha Corporation

TABLE 2 - Analyses of Grab Samples

Outfall	030053 (003)	030053 (003)
Matrix	water	water
Date Collected	09/19/94	09/19/94
Time Collected	0930	1940
Temperature (F)	77	85
pH (S.U.)	7.8	7.9
Chlorine (Cl) (mg/l)	<0.01	<0.01
Dissolved Oxygen (mg/l)	5.8	5
Suspended Solids (mg/l)	120	150
Dissolved Solids (mg/l)	780	1200
BOD-5 (mg/l)	32	53
TOC (mg/l)	130	130
Nitrite (mg/l)	.05 DM	.09 DM
NO3 + NO2 (mg/l)	.08 DM	.07 DM
NH3 (mg/l)	.11 DM	.09 DM
Kjeldahl Nitrogen (mg/l)	5.1	5
Total Phosphorus (mg/l)	1	1
Ortho Phosphate (mg/l)	.17 DM	.34 DM
Total Cyanide (mg/l)	.015	.021
Amenable Cyanide (mg/l)	FCN	FCN
Alkalinity (as CaCO3)	457	656
Hardness (as CaCO3)	265	255
Conductivity (umho/cm)	1057	1415
Calcium (mg/l)	76	72
Chloride (mg/l)	39	58
Sulfate (mg/l)	60	68
Magnesium (mg/l)	18	18
Sulfide (mg/l)	<.15 DM,PI	<.15 DM,PI
Oil & Grease (grav) (mg/l)	<10	<10
	ug/l	ug/l
Phenolics	350	350
Total Cadmium (Cd)	.5	.5
Total Chromium (Cr)	3.4	3.3
Total Copper (Cu)	14	16
Total Nickel (Ni)	5.9	5.6
Total Lead (Pb)	5.3	6.1
Total Zinc (Zn)	89	80
Hexavalent Chromium (Cr+6)	<5	<5
Total Aluminum (Al)	1200	1400
Total Arsenic (As)	5.5	5.6
Total Iron (Fe)	1400	1200
Total Mercury (Hg)	<.2	<.2
Total Silver (Ag)	<.5	<.5
Total Selenium (Se)	<1	<1
Total Molybdenum (Mo)	<25	<25
Total Antimony (Sb)	<1	1.1
Total Barium (Ba)	160	160
Total Beryllium (Be)	<1	<1
Total Cobalt (Co)	<15	<15
Total Lithium (Li)	<8	<8
Total Manganese (Mn)	210	200
Total Titanium (Ti)	14	25
Total Vanadium (V)	12	11

Menasha Corporation

TABLE 3

Outfall	030138 (001)	030138 (001)
Matrix	water	water
Sample Type	grab	grab
Date & Time Collected	09/19/94 0855	09/19/94 1905
Scan 8260 (Volatile)		
Dilution Factor	1	1
	ug/l	ug/l
Chloromethane	< 5 ND	< 5 ND
Vinyl chloride	< 5 ND	< 5 ND
Bromomethane	< 5 ND	< 5 ND
Chloroethane	< 5 ND	< 5 ND
2-Propanone (Acetone)	< 25 ND	< 25 ND
1,1-Dichloroethene	< 1 ND	< 1 ND
Methylene chloride	< 5 ND	< 5 ND
Carbon Disulfide	< 5 ND	< 5 ND
trans-1,2-Dichloroethene	< 1 ND	< 1 ND
Methyl Tert. Butyl Ether	< 5 ND	< 5 ND
1,1-Dichloroethane	< 1 ND	< 1 ND
2-Butanone (MEK)	< 5 ND	< 5 ND
cis-1,2-Dichloroethene	< 1 ND	< 1 ND
Chloroform	< 1 ND	< 1 ND
1,1,1-Trichloroethane	< 1 ND	< 1 ND
1,2-Dichloroethane	< 1 ND	< 1 ND
Benzene	< 1 ND	< 1 ND
Carbon Tetrachloride	< 1 ND	< 1 ND
1,2-Dichloropropane	< 1 ND	< 1 ND
Trichloroethene	< 1 ND	< 1 ND
Bromodichloromethane	< 1 ND	< 1 ND
2-Hexanone	< 5 ND	< 5 ND
cis-1,3-Dichloropropene	< 1 ND	< 1 ND
trans-1,3-Dichloropropene	< 1 ND	< 1 ND
Toluene	< 1 ND	< 1 ND
1,1,2-Trichloroethane	< 1 ND	< 1 ND
4-Methyl-2-Propanone (MIBK)	< 5 ND	< 5 ND
Dibromochloromethane	< 1 ND	< 1 ND
1,2-Dibromomethane	< 1 ND	< 1 ND
Tetrachloroethene	< 1 ND	< 1 ND
Chlorobenzene	< 1 ND	< 1 ND
Ethylbenzene	< 1 ND	< 1 ND
m & p Xylene	< 2 ND	< 2 ND
Bromoform	< 1 ND	< 1 ND
Styrene	< 1 ND	< 1 ND
o-Xylene	< 1 ND	< 1 ND
1,1,2,2-Tetrachloroethane	< 1 ND	< 1 ND

Menasha Corporation

TABLE 3

Outfall	030053 (003)	030053 (003)
Matrix	water	water
Sample Type	grab	grab
Date & Time Collected	09/19/94 0930	09/19/94 1940
Scan 8260 (Volatile)		
Dilution Factor	2	2
	ug/l	ug/l
Chloromethane	< 10 ND	< 10 ND
Vinyl chloride	< 10 ND	< 10 ND
Bromomethane	< 10 ND	< 10 ND
Chloroethane	< 10 ND	< 10 ND
2-Propanone (Acetone)	170 J	150 J
1,1-Dichloroethene	< 2 ND	< 2 ND
Methylene chloride	< 10 ND	< 10 ND
Carbon Disulfide	< 10 ND	< 10 ND
trans-1,2-Dichloroethene	< 2 ND	< 2 ND
Methyl Tert. Butyl Ether	< 10 ND	< 10 ND
1,1-Dichloroethane	< 2 ND	< 2 ND
2-Butanone (MEK)	35 J	32 J
cis-1,2-Dichloroethene	< 2 ND	< 2 ND
Chloroform	2.1	< 2 ND
1,1,1-Trichloroethane	< 2 ND	< 2 ND
1,2-Dichloroethane	< 2 ND	< 2 ND
Benzene	< 2 ND	< 2 ND
Carbon Tetrachloride	< 2 ND	< 2 ND
1,2-Dichloropropane	< 2 ND	< 2 ND
Trichloroethene	< 2 ND	< 2 ND
Bromodichloromethane	< 2 ND	< 2 ND
2-Hexanone	< 10 ND	< 10 ND
cis-1,3-Dichloropropene	< 2 ND	< 2 ND
trans-1,3-Dichloropropene	< 2 ND	< 2 ND
Toluene	< 2 ND	< 2 ND
1,1,2-Trichloroethane	< 2 ND	< 2 ND
4-Methyl-2-Propanone (MIBK)	< 10 ND	< 10 ND
Dibromochloromethane	< 2 ND	< 2 ND
1,2-Dibromomethane	< 2 ND	< 2 ND
Tetrachloroethene	< 2 ND	< 2 ND
Chlorobenzene	< 2 ND	< 2 ND
Ethylbenzene	< 2 ND	< 2 ND
m & p Xylene	< 4 ND	< 4 ND
Bromoform	< 2 ND	< 2 ND
Styrene	< 2 ND	< 2 ND
o-Xylene	< 2 ND	< 2 ND
1,1,2,2-Tetrachloroethane	< 2 ND	< 2 ND

TABLE 3 Menasha Corporation TABLE 3

Scan 3-Chlorinated Hydrocarbons, PCBs & Organochlorine Pesticides

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Survey Period	from	09/19/94 0920
	to	09/20/94 0920
Dilution Factor		1

		ug/l	
1,3-Dichlorobenzene	<	.1	ND
1,4-Dichlorobenzene	<	.1	ND
1,2-Dichlorobenzene	<	.1	ND
Hexachloroethane	<	.01	ND
1,3,5-Trichlorobenzene	<	.01	ND
1,2,4-Trichlorobenzene	<	.01	ND
1,2,3-Trichlorobenzene	<	.01	ND
Hexachlorobutadiene	<	.01	ND
1,2,4,5-Tetrachlorobenzene	<	.01	ND
Hexachlorocyclopentadiene	<	.01	ND
2-Chloronaphthalene	<	.2	ND
1,2,3,4-Tetrachlorobenzene	<	.01	ND
Pentachlorobenzene	<	.01	ND
a-BHC	<	.01	ND
Hexachlorobenzene	<	.01	ND
b-BHC	<	.01	ND
g-BHC (lindane)	<	.01	ND
Pentachloronitrobenzene	<	.01	ND
d-BHC	<	.01	ND
Heptachlor	<	.01	ND
Aldrin	<	.01	ND
Heptachlor epoxide	<	.01	ND
g-Chlordane	<	.01	ND
Endosulfan I	<	.01	ND
a-Chlordane	<	.01	ND
4,4'-DDE	<	.01	ND
Endrin	<	.01	ND
Dieldrin	<	.01	ND
4,4'-DDD	<	.05	ND
4,4'-DDT	<	.01	ND
Hexabromobenzene	<	.01	ND
Methoxychlor	<	.05	ND
Mirex	<	.01	ND
Aroclor 1242	<	.1	ND
Aroclor 1254	<	.1	ND
Aroclor 1260	<	.1	ND
*Aroclor 1016	<	.1	ND
*Aroclor 1221	<	.1	ND
*Aroclor 1232	<	.1	ND
*Aroclor 1248	<	.1	ND
*Aroclor 1262	<	.1	ND
*Aroclor 1268	<	.1	ND
BP-6 (PBB)	<	.05	ND
*Toxaphene	<	.1	ND

* Seldomly encountered, reported semi-quantitatively

Menasha Corporation

TABLE 3 - Organic Scan List

GC/MS Base/Neutrals

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Date & Time collected		09/19/94 0920 to 09/20/94 0920
Dilution Factor		1
		ug/l
Bis(2-chloroethyl)ether	<	1 ND
1,3-Dichlorobenzene	<	1 ND
1,4-Dichlorobenzene	<	1 ND
1,2-Dichlorobenzene	<	1 ND
Bis(2-chloroisopropyl)ether	<	1 ND
N-Nitroso-di-n-propylamine	<	2 ND
Hexachloroethane	<	1 ND
Nitrobenzene	<	2 ND
Isophorone	<	1 ND
Bis(2-chloroethoxy)methane	<	2 ND
1,2,4-Trichlorbenzene	<	2 ND
Naphthalene		4.3
Hexachlorobutadiene	<	2 ND
Hexachlorocyclopentadiene	<	2 ND
2-Chloronaphalene	<	2 ND
Dimethylphthalate	<	2 ND
Acenaphthylene	<	1 ND
2,6-Dinitrotoluene	<	5 ND
Acenaphthene	<	1 ND
2,4-Dinitrotoluene	<	5 ND
Fluorene	<	1 ND
Diethylphthalate	<	1 ND
4-Chlorodiphenyl ether	<	1 ND
N-Nitrosodiphenyl amine	<	5 ND
1,2-Diphenylhydrazine	<	2 ND
4-Bromodiphenyl ether	<	2 ND
Hexachlorobenzene	<	1 ND
Phenanthrene	<	1 ND
Anthracene	<	1 ND
Di-n-butylphthalate	<	1 ND
Fluoranthene	<	1 ND
* Benzidine	<	15 ND
Pyrene	<	1 ND
Butyl benzyl phthalate	<	1 ND
Benzo(a)anthracene	<	1 ND
* 3,3'-Dichlorobenzidine	<	10 ND
Chrysene	<	1 ND
Bis(2-ethylhexyl)phthalate	<	2 ND
Di-n-octylphthalate	<	2 ND
Benzo(b)fluoranthene	<	2 ND
Benzo(k)fluoranthene	<	2 ND
Benzo(a)pyrene	<	2 ND
Indeno(1,2,3-c,d)pyrene	<	5 ND
Dibenzo(a,h)anthracene	<	5 ND
Benzo(g,h,i)perylene	<	5 ND

* Seldomly encountered, reported semi-quantitatively.

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TABLE 3

Outfall		030053 (003)
Matrix		water
Sample Type		composite
Date & Time Collected	from	09/19/94 0920
	to	09/20/94 0920

Scan 8-Phenols

Dilution factor		0		
		ug/l		
Phenol	<	0	ND	*
2-Chlorophenol	<	0	ND	*
o-Cresol	<	0	ND	*
m & p-Cresol	<	0	ND	*
2-Nitrophenol	<	0	ND	*
2,4-Dimethylphenol	<	0	ND	*
2,4-Dichlorophenol	<	0	ND	*
4-Chloro-3-methylphenol	<	0	ND	*
2,4,6- Trichlorophenol	<	0	ND	*
2,4,5-Trichlorophenol	<	0	ND	*
2,4-Dinitrophenol	<	0	ND	*
4-Nitrophenol	<	0	ND	*
2-Methyl-4,6-dinitrophenol	<	0	ND	*
Pentachlorophenol	<	0	ND	*

* Sample turned to 1.3 ml oil; HC patterns; no DL

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TABLE 4

parison of survey results with the facility's NPDES Permit and Discharge Monitoring Report.

Effluent Parameter (unit)	Final Effluent Limitations				September Discharge Monitoring Report					Survey Results	
	30-day Avg.	7-day Avg.	Daily Min.	Daily Max.	Monthly Average	Monthly Maximum	7-day Average	09/19/94	09/20/94	Composite	(grab)
Outfall 030138 (001)											
Flow (MGD)				.6	.079	.399		.399	.036	.22	
Temperature (F)				(report)	75	78		78			(71,81)
Tot. Copper (ug/l)				105	10	11			10	5.1	(33,50)
pH (S.U.)			6.5	9	MIN 7.2	7.3		7.3			(7.2,7.3)
Outfall 030053 (003)											
Flow (MGD)				9.955	1.603	1.98		1.84	1.82	1.8	
Tot. Copper (ug/l)				105	21	34		13		14	(14,16)
Zinc (ug/l)				506	139	220		110		80	(89,80)
erature (F)				(report)	77	80		79			(77,85)
Tot. Phosphorus (mg/l)	(report)				1.8	2.19			1.41	1.3	(1,1)
pH (S.U.)			6.5	9	MIN 8	8.1		8			(7.8,7.9)

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TABLE 5

Comparison of the laboratory analytical results obtained by the facility and the MDNR Environmental Laboratory from the split samples.

Outfall	030138 (001)		030053 (003)	
Sample type	grab		grab	
Date & Time collected	09/19/94 0855		09/19/94 0930	
Parameter (unit)	facility results	MDNR results	facility results	MDNR results
Total Phosphorus (mg/l)	--	--	1.52	1
Total Copper (ug/l)	19	33	22	14
Total Zinc (ug/l)	--	--	160	89

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TABLE 6

Comparison of the previous survey results with the results obtained in this survey.

Outfall	030138 (001)		030053 (003)	
Matrix	water		water	
Survey Date From	08/24/92	09/19/94	08/24/92	09/19/94
To	08/25/92	09/20/94	08/25/92	09/20/94
	mg/l	mg/l	mg/l	mg/l
Suspended Solids	<4	<4	68	110
Dissolved Solids	360	350	960	1100
BOD-5	ACC	<2	22	37
TOC	1.5	1.8	74	140
NO2	<.01	<.01	.01	.07
NO3 + NO2	.33	.33	.06	<.05
NH3	.01	.13	<.05	.07
Kjeldahl Nitrogen	.23	.2	3.4	7.2
Total Phosphorus	.2	.4	.89	1.3
Ortho Phosphate	.02	.04	.35	.34
Total Cyanide	<.005	<.005	.011	.018
Amenable Cyanide	FCN	FCN	FCN	FCN
Alkalinity (as CaCO3)	217	203	524	609
Conductivity (umho/cm)	572	589	1228	1347
Hardness (as CaCO3)	235	250	215	250
Calcium	61	67	56	70
Magnesium	20	20	18	18
Chloride	35	34	41	53
Sulfate	28	24	81	66
Sulfide	<.02	<.02	.02	<.15
	ug/l	ug/l	ug/l	ug/l
Phenolics	<10	<10	200	220
Total Cadmium (Cd)	<.2	<.2	.3	.6
Total Chromium (Cr)	<1	<1	1.8	2.6
Total Copper (Cu)	2	5.1	7.3	14
Total Lead (Pb)	<1	<1	2.2	4.9
Total Nickel (Ni)	<2	<2	2.4	4.9
Total Zinc (Zn)	<4	<4	24	80
Total Mercury (Hg)	<.2	<.2	<.2	<.2
Total Silver (Ag)	<.5	<.5	<.5	<.5
Total Selenium (Se)	<1	<1	<1	<1
Hexavalent Chromium (Cr+6)	<5	<5	<5	6
Total Arsenic (As)	<1	<1	4.2	5.6
Total Antimony (Sb)	<1	<1	4.1	1.2
Total Iron (Fe)	480	460	800	1200
Total Cobalt (Co)	<15	<15	<15	<15
Total Lithium (Li)	<8	<8	9.3	<8
Total Manganese (Mn)	51	78	170	190
Total Aluminum (Al)	<50	<50	340	1100
Total Barium (Ba)	70	77	100	160
Total Beryllium (Be)	<1	<1	<1	<1
Total Molybdenum (Mo)	<25	<25	<25	<25
Total Titanium (Ti)	<15	<10	<15	17
Total Vanadium (V)	<10	<10	16	10

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TABLE 7

Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2)
Phenols (Chlorine Present)	Dechlorinate w/ferrous ammonium sulphate (0.141 N) 1 drop/mg/l Cl_2/250 ml. H_2SO_4 to pH <2.
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l, 10 drops 10 N NaOH (to pH >12)/250 ml.
Dissolved Oxygen(D.O.)	Meter reading.
Total Metals	2 ml 1:1 HNO_3/250 ml (to pH <2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3/250 ml (to pH <2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml to dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2)
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10 N NaOH to pH 9/250 ml.
Base-neutral & Acid Extractables	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Purgeable Organics	5 drops conc. HCl (to pH <2)

Samples preserved as required, cooled to 4 degrees Centigrade with chain of custody maintained.

Lab Letter Codes

DL Sample analyzed using a dilution(s).

DM Dilution required due to matrix problems.

FCN Free cyanide was not analyzed due to low level of total cyanide found. By definition, the free cyanide would be less than or equal to the total cyanide.

J Estimated value; value may not be accurate.

ND Not detected.

PI Possible interference may have affected the accuracy of the laboratory result.

Menasha Corporation

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