ALLIED PAPER COMPANY CHARGES FOR WASTEWATER SERVICE

DATE	FLOW (MGD)	SUSP. SOLIDS MG/L	BOD_5 MG/L	FLOW COST	SUSP. SOLIDS COST	BOD_5 COST	TOTAL COST
3-7*	0.300	72	126	$148	$ - 0 -	$ - 0 -	$ 148
3-7**	0.700	2,090	573	344	400	88	832
3-8	0.948	1,040	218	466	226	- 0 -	692
3-9	0.638	900	323	314	124	18	456
3-10	0.774	1,470	417	381	290	50	721
3-11	1,004	1,908	435	494	516	72	1,082
3-12	1,309	1,384	173	644	454	- 0 -	1,098
3-13	1.261	1,352	458	620	425	102	1,147
3-14	1.000	784	233	492	157	- 0 -	649
3-15	0.793	1,980	469	390	425	68	883
3-16	0.955	760	210	470	142	- 0 -	612
3-17	0.997	1,750	334	491	462	33	986
3-18	1.007	1,920	420	495	521	67	1,083
3-19	1.095	1,570	308	539	445	25	1,009
3-20	1.517	708	195	746	201	- 0 -	947
3-21	1.374	3,488	833	676	1,394	312	2,382
3-22	1.791	1,146	330	881	487	56	1,424
3-23	1.254	1,230	240	617	374	- 0 -	991
3-24	0.890	1,016	203	438	205	- 0 -	643
3-25	0.974	1,600	319	479	405	26	910
3-26	0.929	2,820	382	457	749	48	1,254
3-27	0.897	1,610	338	441	376	31	848
3-28**	0.495	2,080	474	244	281	43	568
3-28*	0.189	- 0 -	-0-	93	-0-	-0-	93
3-29*	0.561	- 0 -	-0-	276	-0-	-0-	276
TOTAL	23.652	34,688	8,011	$11,636	$9,059	$1,039	$21,734

*Treated Effluent
** Untreated Effluent

4-15-82
R. G. Simms

EPA Region 5 Records Ctr.
201031

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

Report of an
Industrial Wastewater Survey
Conducted at
ALLIED PAPER COMPANY
All Outfalls No 390222
NPDES Permit No MI0000779
Kalamazoo County
Kalamazoo, Michigan
January 26-27, 1981

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, January 26, 1981

The results of this survey met the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No MI0000779. The survey results are compared to the permit and to the results reported on the facility's Monthly Operating Report in Table 3 Settleable solids and total suspended solids results on the facility's MOR were less than the survey results

A portion of the composite samples taken at outfalls 390004 (001) and 390006 (002) were split with the facility for comparison of analytical results. TOC survey results found at outfall 390006 (002) were less than the results found by the facility. Suspended solids survey results from the same outfall were greater than the facility's results.

The results from this survey are compared to the results from the previous survey done on June 24, 1980 in Table 5 Flow was much less during this survey than during the last survey This can be attributed to closing down the Monarch Mill

Groundwater drainage from the company's landfill area was sampled and the results are in Table 2.

Plant Processes

Allied Paper Corporation now operates one mill in Kalamazoo This is known as the Bryant Mill. Another mill, known as the Monarch Mill, has been permanently shut down. The Bryant Mill produces bible paper and other specialty papers on the Fourdrinier machines.

Under normal production the mill produces approximately 220 tons of product per day The mill uses Kraft pulp manufactured at other locations.

The mill employs 389 people and operates 24 hours per day, 7 days per week. Production was considered normal during the survey.

Water, Wastewater & Treatment

Portage Creek supplies the process water. Water used at the Bryant Mill is chlorinated and passed through sand filters prior to its use Potable water for the mill is obtained from the City of Kalamazoo Domestic wastes are discharged to the city's sanitary sewer system

Schematics of the wastewater treatment system and plant configeration are shown in Figure 1 & 2 Wastewater received at the 100-foot circular Bryant clarifier originates from excess white water, filter backwash, and from the lime soda ash softening process used for boiler feed water. Alum and a polymer are added to improve settling in the Bryant clarifier The Bryant clarifier effluent is either discharged to the city sanitary sewer system or to the 50-foot circular Monarch clarifier The company maximizes the loading which can be placed on the Monarch clarifier without exceeding permit limitations for discharging to Portage Creek. Flow is automatically apportioned via a computerized system utilizing a total organic carbon analyzer. Monarch clarifier effluent discharges to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is disposed of on plant property

Survey Procedure

The flows and samples were obtained as follows:

Outfall	Flow Measurement	Sampling
390004 (001)	Company-installed totalizer.	5 Aliquot grab composite and individual grabs
390006 (002)	Company-installed 48" full channel weir, staff-installed water level recorder	Automatic air-activated sampler and individual grabs

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.

Extractable organic 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.

Table 1 Analyses of composite samples.

Outfalls		390004 (001)	390006 (002)	
Survey Period	From	1-26-81 - 1315	1-26-81 - 1155	
	To	1-27-81 - 1315	1-27-81 - 1155	
Computed flow rate[1] (M^3/day)		(5,806)	2,500*	
		mg/l	mg/l	kg/day
COD		150	110	280
TOC		58	38	95
Phenol		0.007	0.008	0.02
BOD_5		110	62	160
$CBOD_5$		96	56	140
Nitrite & nitrate nitrogen-N		0.83	0.08	0.2
Ammonia nitrogen-N		< 0.01	< 0.01	--
Kjeldahl nitrogen-N		4.2	4.0	10.
Orthophosphates-P		0.08	0.05	0.1
Total phosphorus-P		0.50	0.33	0.82
Suspended solids		49	47	120
Dissolved solids		640	590	1,500
Settleable solids		< 2	9	20
			ug/l	kg/day
Pentachlorophenol (PCP)		--	0.58	0.0014

1 - Flow rates used in the computation of kg/day
* - 3 significant figures.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Allied Paper Company - Kalamazoo

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	COD mg/l	TOC mg/l	Phenol mg/l	$CBOD_5$ mg/l	BOD_5 mg/l	Nitrite & nitrate nitrogen mg/l	Ammonia nitrogen mg/l
390004 (001)												
1-26-81	1750	6,050	20.5	7.9	U	160	51	0.007	71	80	0.32	< 0.01
1-27-81	0840	14,000	20.0	7.1	U	210	69	0.005	130	140	0.75	0.08
390006 (002)												
1-26-81	1630	2,120	18.0	7.4	U	110	39	0.007	53	60	0.40	< 0.01
1-27-81	0810	2,420	18.5	7.2	U	130	42	0.006	68	71	< 0.01	< 0.01
390222 (Drainage from Landfill)												
1-27-81	0900	--	3.0	7.7	--	15	--	--	1.4	1.9	0.14	0.80

Date	Time	Kjeldahl nitrogen mg/l	Ortho-phosphates-P mg/l	Total phosphorus-P mg/l	Susp. solids mg/l	Diss. solids mg/l	Settle. solids mg/l	O&G I.R. mg/l	O&G Grav. mg/l
390004 (001)									
1-26-81	1750	4.4	0.04	0.94	52	460	12	4	4
1-27-81	0840	3.4	0.05	0.22	50	670	< 2	1	3
390006 (002)									
1-26-81	1630	4.4	0.03	0.32	38	580	3	3	2
1-27-81	0810	3.8	0.05	0.32	34	540	< 2	1	3
390222 (Drainage from Landfill)									
1-27-81	0900	1.2	0.08	0.12	5	540	--	< 1	< 2

1 - Flow at time of grab sampling.
2 - Values determined in the field at time of sampling.

Allied Paper Company - Kalamazoo

Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Parameter (Unit)	NPDES Permit Final Limitations		January Monthly Operating Report				Survey Results[1]
	Daily Average	Daily Maximum	Monthly Average	Monthly Maximum	1-26-81	1-27-81	
390006 (002)							
Flow (M^3/day)	--	--	3,560	7,086	2,270	2,060	2,500
Settleable solids (ml/l)	--	--	0.05	0.10	0.05	0.05	--
(mg/l)	--	--	--	--	--	--	9 (3, <2)
Oil & Grease (visual)	No visible film		0	0	0	0	--
(mg/l)	--	--	--	--	--	--	(2, 3)
BOD_5 (kg/day)	230	350	206	349	98.4	148	160
Total susp. solids (kg/day)	230	350	73	170.	50	65.8	120
pH (S.U.)	not <6.5 nor >9.5		--	min. 6.5 max. 7.3	7.0	6.9	(7.4, 7.2)

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
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 Allied Paper Company and the Environmental Protection Bureau from the split composite samples.

Outfalls	390004 (001)		390006 (002)	
	Allied Paper	E.P.B.	Allied Paper	E.P.B.
Flow (M^3/day)	--	--	2,130	2,500
	mg/l	mg/l	mg/l	mg/l
TOC	44	58	62	38
BOD_5	94.3	110	49.8	62
Settleable solids	0.05[1]	< 2	0.05[1]	9
Suspended solids	44	49	34	47

1 - units are ml/l.

Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfall	390006 (002)	
Survey Date From To	6-24-80 6-25-80	1-26-81 1-27-81
Flow Rate (M^3/day)	5,910	2,500
	mg/l	mg/l
Suspended solids	< 2	47
Dissolved solids	460	590
Settleable solids	< 2	9
COD	66	110
TOC	19	38
BOD_5	44	62
$CBOD_5$	37	56
Nitrite & nitrate nitrogen-N	1.0	0.08
Ammonia nitrogen-N	0.06	< 0.01
Kjeldahl nitrogen-N	0.92	4.0
Ortnophosphates-P	< 0.01	0.05
Total phosphorus-P	0.02	0.33

Table 6 Sample Preservation

Parameter	Preservative
COD/TOC/Phenol (Chlorine Absent)	10 drops conc. H_2SO_4/250 ml (to pH <2).
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2).
Acid & Base-neutral Extractables	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).

All samples cooled to 4°C and preserved upon collection and chain of custody maintained.

Survey by: Ralph Reznick, Environmental Engineer
Edward Hamilton, Water Quality Technician
Kent Mottinger, Water Quality Technician

Contact with Management: Les Stoeffler

Hydrocarbon Analyses by: Environmental Protection Bureau Laboratory

Physical, Chemical & Bacteriological Analyses by: Environmental Protection Bureau Laboratory

Report by: Ralph Reznick
Edward Hamilton
Point Source Studies Section
Environmental Services Division
Environmental Protectic Bureau
Michigan Department of Natural Resources

Distribution "A"
MH
4/6/81

FIGURE. I

ALLIED PAPER MILLS
KALAMAZOO

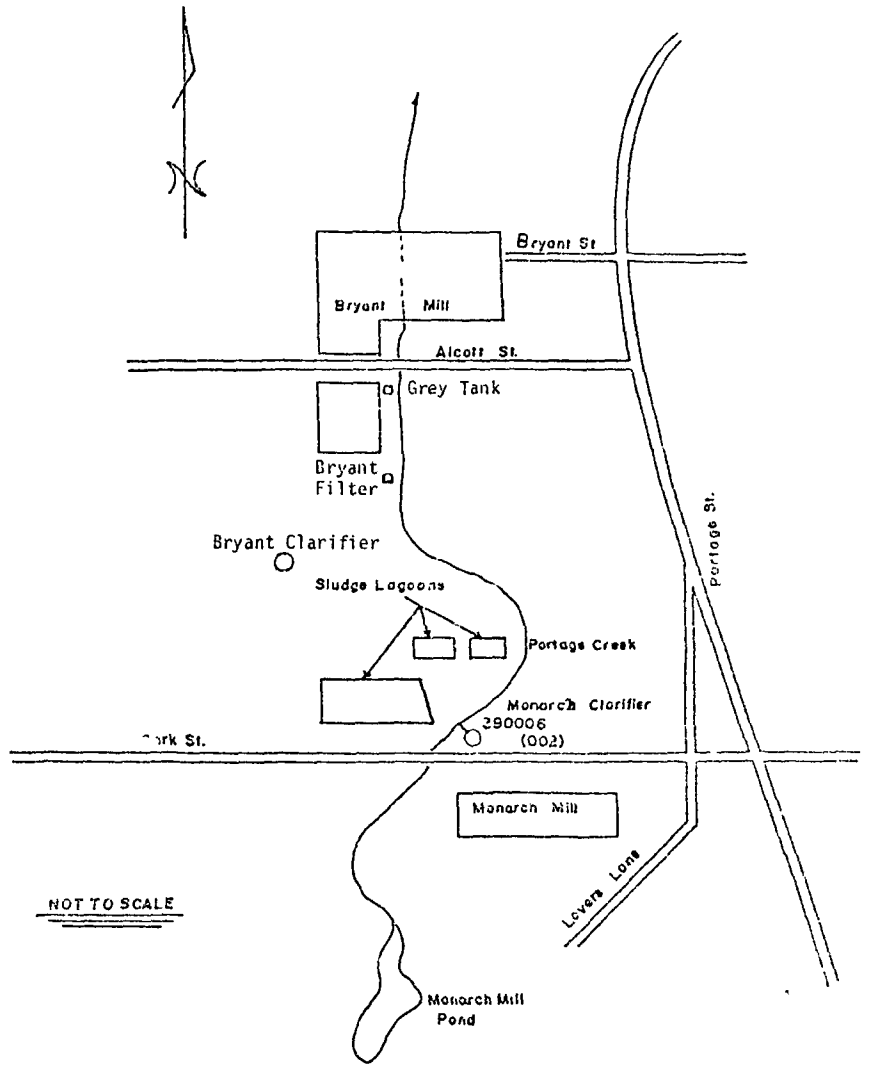
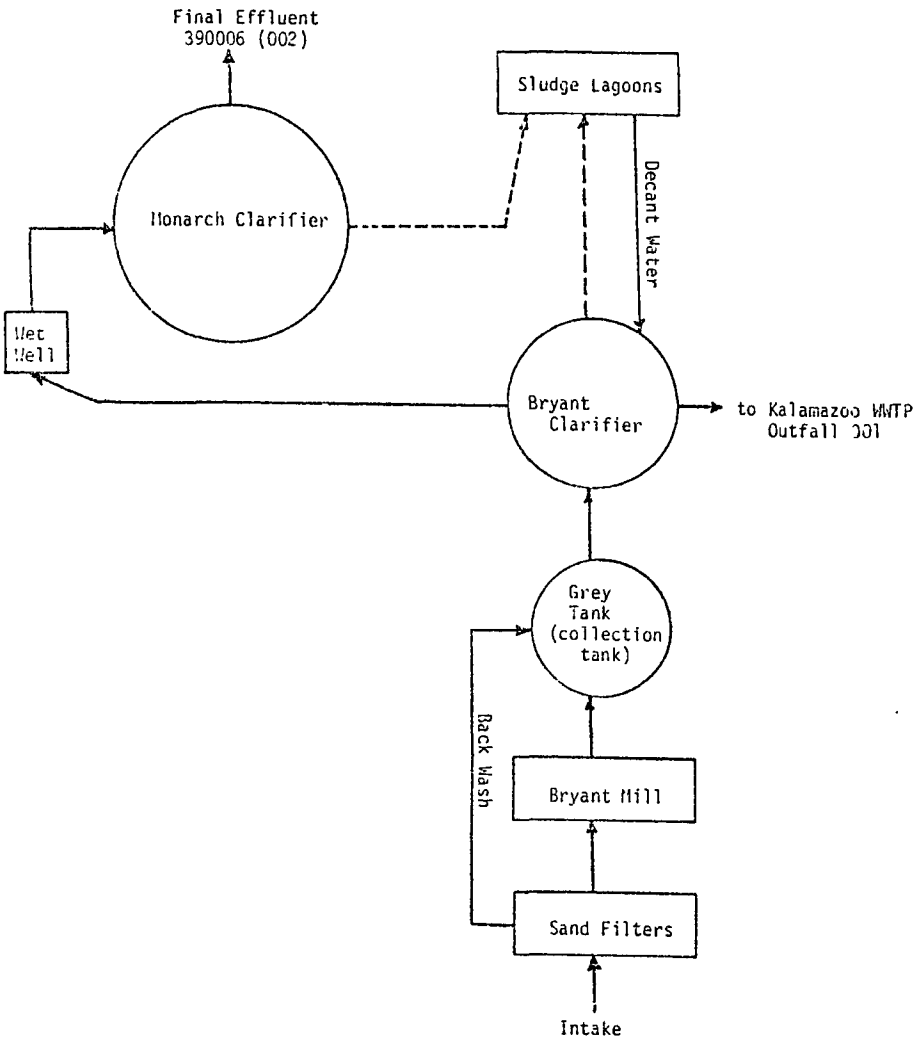


Figure 2 Allied Paper Company - Kalamazoo

Wastewater Treatment



TZK 4/29/81

Jack

These are our results on T.S.S + BOD

	TSS	BOD	
Jul 21	48	169.5	1859180
22	26	129.8	1433190
23	30	145.5	1554000
24	3	125.3	1813000
25	10	154.5	861000
26	40	195.0	928000
27	19	154.5	1453250
28	20	174.0	1422970
29	108	147.0	1165000
30	21	183.0	832000
31	22	146.8	1277000
1	18	133.5	170,3000
2	22	137.3	1923000
3	34	150.8	152,6590
4	36	145.5	5616120
5	32	134.8	241000
6	46	130.5	2227000
7	49	138.0	2916000
8	79.2	199.5	2421000
9	60	138.5	1514000
10	45	118.3	1249360
11	22	103.2	1006280
12	26	125.5	1196000
13	21	123.0	1262000
14	37	219.0	1410000
15	37	198.0	1077000
16	50	205.3	860330
17	36	262.5	717060
18	72	261.0	853220
19	22	208.6	734000
20	32	243.0	1310000
21	36	207.0	743000
22	74	187.5	713000
23			
24	12		
25	45		
26	93		
27	64		

1,946,000
2,175,00
1,971,000
1,940,000
1,831,000

Maximum Credit

$0.35 \times m^3 \times \$0.26/m^3$

$< = 0.091 \times m^3 = \$$ max.

Allied Laboratory Data 1983

Date	TSS mg/l	BOD mg/l	Date	TSS mg/l	BOD mg/l
1/7/83	124	* 150-210 ~~700~~	6/24/83	108	88
1/14/83	52	165	7/1/83	80	66
1/21/83	112	---	7/8/83	104	60
1/28/82	108	98	7/15/83	82	95
2/4/83	82	123	7/22/83	78	123
2/11/83	54	189	7/29/83	112	90
2/18/83	72	96	8/5/83	56	104
2/25/83	44	117	8/12/83	46	91
3/4/83	44	141	8/19/83	44	117
3/11/83	28	135	8/26/83	44	138
3/18/83	24	126	9/2/83	10	89
3/25/83	44	120	9/9/83	40	89
4/1/83	- No Sample -		9/16/83	38	117
4/8/83	102	111	9/23/83	40	104
4/15/83	82	76	9/30/83	36	86
4/22/83	34	75	10/7/83	92	138
4/29/83	46	59	10/14/83	18	94
5/6/83	26	110	10/21/83	54	102
5/13/83	48	104	10/28/83	8	114
5/20/83	52	NS ~~338~~	11/4/83	14	98
5/27/83	47	107	11/11/83	36	138
6/3/83	94	123	11/18/83	64	150
6/10/83	44	89	11/25/83	- No Sample -	
6/17/83	56	69			

* problem with dilution water deionizer.

February 23, 1983

Mr. U. G. Stoeffer
Process Development
Allied Paper, Inc.
Kalamazoo, Michigan 49003

Dear Mr. Stoeffer:

Enclosed is a copy of a "Report of an Industrial Wastewater Survey" conducted on Allied Paper Company's discharge to the Portage Creek and the Kalamazoo sanitary sewer system on October 25-26, 1982. The report includes the volume of wastewater discharged and results of chemical analyses performed on the composite of the collected effluent. In addition, grab samples were obtained for certain determinations.

The results of the survey indicated that Allied Paper's discharge to Portage Creek from the Monarch clarifier, 390006 (002) met the daily maximum limitations contained in the NPDES permit No. MI0000779 at the time of the survey.

The survey results compared well with the Monthly Operating Report results for all parameters except settleable solids (see Table 3 in the report). Apparently, this is due to a difference in the units of measurement used.

If you have any questions concerning this report, please contact the Surface Water Quality Division at (517) 373-3710.

Sincerely,

John Vollmer

John Vollmer
Surface Water Quality Division

ej

cc: EPA Region V
SWQD Lansing
District File
Kalamazoo WWTP

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE MONITORING SECTION

Report of an
Industrial Wastewater Survey
Conducted at
ALLIED PAPER
All Outfalls No. 390222
NPDES Permit No. MI0000779
Kalamazoo County
Kalamazoo, Michigan
October 25-26, 1982

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, October 25, 1982.

The results of this survey met the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0000779. (Table 3)

The survey results were compared to the plant's Monthly Operating Report (MOP) results. The results compare well except for settleable solids. (Table 3)

One grab sample from outfall 390006 (002) was split for comparison of analytical results. These results also compare well. (Table 4)

The results from this survey are presented along with those of the previous survey conducted in March 1982 in Table 5.

Survey Comments

A small amount of groundwater seepage from the old Monarch Mill area was observed entering the Monarch clarifier inlet. This seepage was sampled and analyzed for organic chemicals. Only trace amounts of chlorinated hydrocarbons were detected. (Table 2)

A 96-hour flow-through bioassay was conducted encompassing the survey period. Results will be forthcoming in a separate report.

Plant Processes

The Allied Paper Corporation produces bible paper, light weight printing papers and other specialty papers at its Bryant Mill in Kalamazoo. The mill operates 5 fourdrinier paper machines and one off-machine coater. The normal production of the mill is approximately 220 tons of product per day and actual production figures are given in the appendix. The mill employs about 390 people and operates 24 hours per day, 7 days per week.

The mill uses bleached kraft pulps manufactured at other locations. Both softwood and hardwood pulps are used. Clay, titanium dioxide and calcium carbonate are used as fillers. Very small amounts of direct dyes are used for tinting some grades of paper. Rosin and alum are used for sizing. On some grades of paper small amounts of melamine formaldehyde is used to improve wet strength. No bleaching is done in the normal process of making paper.

On the coater polymeric synthetic latices and/or natural water soluble polymers are used as binders. Styrene-butadiene, vinyl acetate and acrylics are all used from time to time. Of the five paper machines three have flotation type save-alls and two have disc-type save-alls.

Water Supply, Wastewater & Treatment

Process water used at the Bryant Mill is obtained from the Portage Creek and is chlorinated and passed through sand filters prior to use. Potable water for the mill is obtained from the City of Kalamazoo. Domestic wastes are discharged to the city's sanitary sewer system. Boiler water is softened by a hot lime-soda process.

Process wastewaters from excess white water, coating machine water, filter backwash, softener backwash and boiler blowdown are discharged to the 100 ft. diameter Bryant clarifier. A polymer is added to improve settling. A portion of the Bryant clarifier effluent is discharged to the City of Kalamazoo sanitary sewer system via outfall 390004 (001). The remainder of the Bryant clarifier effluent is discharged to the 90 ft. diameter Monarch clarifier. Flow is automatically apportioned by a computerized system utilizing a total organic carbon analyzer. Some of the Monarch clarifier effluent may be recycled for process water, but this was not being done during this survey. The remaining Monarch clarifier effluent is discharged to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is pumped to drying lagoons on plant property adjacent to the clarifiers.

Survey Procedure

The flows and samples were obtained as follows:

Sampling Location	Flow Measurement	Sampling Methods
390004 (001)	Company totalizer	Automatic air activated sampler, 4 portion grab composite and individual grabs.
390006 (002)	Staff installed water level recorder on a company 36" rectangular weir.	Automatic air activated sampler, 5 portion grab composite and individual grabs.
Manhole near 002	none	Individual grab.

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.

Extractable organic and sulfide 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.

Allied Paper Corporation - Kalamazoo

Table 1 Analyses of composite samples.

Outfalls	390004 (001)		390006 (002)	
Survey Period From	10-25-82 @ 1527		10-25-82 @ 1255	
To	10-26-82 @ 1527		10-26-82 @ 1255	
Computed flow rate[1] (M^3/day)	(6,990)		1,590	
	mg/l	kg/day	mg/l	kg/day
Suspended solids	34	240	25	40
Dissolved solids	580	4,100	600	1,000
Settleable solids	17	--	9	10
COD	140	980	190	300
TOC	53	370	59	94
Cyanide (Total)	< 0.005	--	0.011	0.017
Cyanide (Free)	FCN	--	FCN	--
Sulfide	< 0.02 PA	--	< 0.02 PA	--
BOD_5	84	590	100	200
Nitrite & nitrate nitrogen-N	1.3	9.1	0.64 DM	1.0
Ammonia nitrogen-N	0.12 DS	0.84	0.30 DM	0.48
Kjeldahl nitrogen-N	2.0	14	2.2	3.5
Total phosphorus-P	0.07	0.5	0.06	0.1
Chlorides	48	340	46	73
Alkalinity (as $CaCO_3$)	126	--	113	--
Hardness (as $CaCO_3$)	270	--	280	--
	ug/l		ug/l	
Phenol	4 NB	0.03	4 NB	0.006
Total cadmium (Cd)	< 20	--	< 20	--
Total chromium (Cr)	< 50	--	< 50	--
Total copper (Cu)	< 20	--	< 20	--
Total nickel (Ni)	< 50	--	< 50	--
Total lead (Pb)	< 50	--	< 50	--
Total zinc (Zn)	< 50	--	< 50	--
Total aluminum (Al)	2,800	20	< 1,000	--
Total titanium (Ti)	< 1,000	--	< 1,000	--
Chlorinated Hydrocarbons Scan				
1,2 Dichlorobenzene	1.20	0.0084	0.35	0.00056
B-Chloronapthalene	--	--	1.20	0.0019
Hexachlorobenzene	< 0.1	--	< 0.1	--
Other Chlorinated Hydrocarbons	U (<0.1)	--	U (<0.1)	--
Phenols Scan				
Pentachlorophenol	< 10	--	< 10	--
Other Phenols	U	--	U	--

1 - Flow rates used in the computation of kg/day (obtained from company totalizer).
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Table 2 Analyses of grab samples.

Date Time	Temp.[1] °C	pH[1] S.U.	Residual[1] Chlorine mg/l	Susp. solids mg/l	Diss. solids mg/l	Settle. solids mg/l	Diss. oxygen mg/l	COD mg/l	TOC mg/l	Total cyanide mg/l	Free cyanide mg/l
390004 (001)											
10-25-82 2215	20.0	7.3	U	41	570	5	--	150	54	< 0.005	FCN
10-26-82 0745	21.0	7.4	U	19	580	7	--	130	51	< 0.005	FCN
390006 (002)											
10-25-82 2245	20.5	7.1	U	38	590	19	1.3	190	61	0.010	FCN
10-26-82 0830	18.0	7.3	U	24	580	< 4	1.7	150	56	0.008	FCN
Manhole at 002											
10-26-82 0845	16.0	7.7	U	--	--	--	--	--	--	--	--

	Sulfide mg/l	BOD_5 mg/l	Nitrite & nitrate nitrogen mg/l	Ammonia nitrogen mg/l	Kjeldahl nitrogen mg/l	Total phosphorus-P mg/l	Chlorides mg/l	Hardness (as $CaCO_3$) mg/l	Alkalinity (as $CaCO_3$) mg/l
390004 (001)									
10-25-82 2215	< 0.02 PA	80	0.94 DM	0.09 DM	1.8	0.08	46	280	122
10-26-82 0745	< 0.02 PA	76	1.5	< 0.05 DS	1.8	0.05	51	280	125
390006 (002)									
10-25-82 2245	< 0.02 PA	110	0.50 DM	0.05 DM	2.1	0.06	45	280	113
10-26-82 0830	< 0.02 PA	100	0.54 DM	< 0.05 DM	2.0	0.05	46	280	115

	O&G I.R. mg/l	O&G Grav. mg/l	Phenol ug/l	Total cadmium ug/l	Total chromium ug/l	Total copper ug/l	Total nickel ug/l	Total lead ug/l	Total zinc ug/l	Total aluminum ug/l	Total titanium ug/l
390004 (001)											
10-25-82 2215	2	2	4 NB	< 20	< 50	< 20	< 50	< 50	< 50	1,200	< 1,000
10-26-82 0745	1	< 2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000
390006 (002)											
10-25-82 2245	2	2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000
10-26-82 0830	2	< 2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000

1 - Values determined in the field at time of sampling.

Allied Paper Corporation - Kalamazoo

Table 2 (continued)

Date Time	Purgeable Halocarbon Scan[2]: Chloroform ug/l	1,1,1 Tri-chloroethane ug/l	Bromodi-chloromethane ug/l	Trichloro-ethene ug/l	Other Purgeable Halocarbons ug/l	Purgeable[2] Aromatic Hydrocarbon Scan ug/l	Aromatic Amines ug/l
390004 (001)							
10-25-82 2215	6.00 PS	1.10	1.20	--	U (<1.00)	U (<5.00)	< 100
10-26-82 0745	5.00 PS	1.30	1.10	--	U (<1.00)	U (<5.00)	< 100
390006 (002)							
10-25-82 2245	4.00 PS	--	--	--	U (<1.00)	U (<5.00)	< 100
10-26-82 0830	3.00 PS	--	--	--	U (<1.00)	U (<5.00)	< 100
Manhole at 002							
10-26-82 0845	2.00 PS	1.30	--	1.20	U (<1.00)	U (<5.00)	--

	Chlorinated Hydrocarbon Scan: 1,2 Di-chlorobenzene ug/l	B-Chloro-napthalene ug/l	Other Chlorinated Hydrocarbons ug/l	Phenols Scan: Pentachloro-phenol ug/l	Hexachlorobi-phenol ug/l	Other Phenols ug/l
Manhole at 002						
10-26-82 0845	1.20	0.95	U (<0.11)	< 10	< 0.1	U

2 - The recommended maximum laboratory holding time was exceeded before analysis was completed. Because of possible sample changes, the actual level may have been higher than the reported value.

Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Parameter (Unit)	NPDES Permit Final Limitations		October Monthly Operating Report				Survey Results[1]
	Daily Average	Daily Maximum	Monthly Average	Monthly Maximum	10-25-82	10-26-82	
390006 (002)							
Flow (M^3/day)	--	--	1,850	3,180	1,430	2,010	1,590
Settleable solids (mg/l)	--	--	0.05	0.05	0.05	0.05	9 (19, <4)
Oil & Grease (visual)	No visible film		0	0	0	0	--
(mg/l)	Quantitative analysis not required		--	--	--	--	(2, <2)
BOD_5 (kg/day)	230	350	207*	269*	160	177	200
Suspended solids (kg/day)	230	350	53*	115*	40	40	40
pH (S.U.)	not <6.5 nor >9.5		--	7.1 min. 6.5	6.9	7.0	(7.1, 7.3)

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205
* - Results reported were determined using data from October 16-31 only, due to a seasonal limit change in effect from October 15 - May 15.

Table 4 Comparison of the laboratory analytical results obtained by Allied Paper - Kalamazoo and the Environmental Protection Bureau from the split grab sample.

Outfall	390006 (002)	
Sample Time & Date	10-26-82 @ 0830	
	Allied	E.P.B.
Flow[1] (M^3/day)	1,450	1,590
	mg/l	mg/l
BOD_5	108.3	100
Settleable solids	0.05	< 4
Suspended solids	30.0	24

1 - Flow reported corresponds to the 24-hour sampling period.

Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfalls	390004 (001)		390006 (002)	
Survey Date From	3-1-82	10-25-82	3-1-82	10-25-82
To	3-2-82	10-26-82	3-2-82	10-26-32
Flow Rate (M^3/day)	5,710	6,990	1,210	--
	mg/l	mg/l	mg/l	mg/l
Suspended solids	28	34	20	25
Dissolved solids	720	580	740	600
Settleable solids	--	--	4	9
COD	220	140	220	190
TOC	74	53	75	59
BOD_5	130	84	140	100
Nitrite & nitrate nitrogen-N	4.3	1.3	5.0	0.64
Ammonia nitrogen-N	0.90	0.12	0.96	0.30
Kjeldahl nitrogen-N	7.5	2.0	9.5	2.2
Total phosphorus-P	0.13	0.07	0.12	0.06

Table 6 Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2).
Cyanide	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml). 10 drops 10 N NaOH (to pH ≥12)/250 ml.
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).
Sulfides	10 drops 1M ZnAc/250 ml.
Base-neutral Extractables Purgeable Organics	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Acid Extractables	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml). 40 drops H_2SO_4/1000 ml (to pH <2).

Samples preserved as required, cooled to 4°C with chain of custody maintained.

Lab Letter Codes

PS - Possible interference may have affected the accuracy of the lab result.
U - Indicates material was analyzed for but not detected.
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 total cyanide.
PA - High absorbance of the sample reagent blank may have affected the precision of the reported result.
DS - Sample was diluted due to other high values on a multi-channel analytical system.
NB - Analytical method has not been approved for routine use. Due to possible low recovery, the actual level may have been higher than the reported value.
DM - Sample was diluted to reduce possible matrix interference.

Survey by: Martin Rock, Environmental Engineer
Elizabeth Browne, Water Quality Technician
Edward Hamilton, Water Quality Technician

Contact with Management: Les Stoeffler

Laboratory Analyses by: Environmental Protection Bureau Laboratory

Report by: Martin Rock
Elizabeth Browne
Point Source Monitoring Section
Surface Water Quality Division
Environmental Protection Bureau
Michigan Department of Natural Resources

Distribution "A"
MM
12/22/82

FIGURE. 1

ALLIED PAPER MILLS
KALAMAZOO

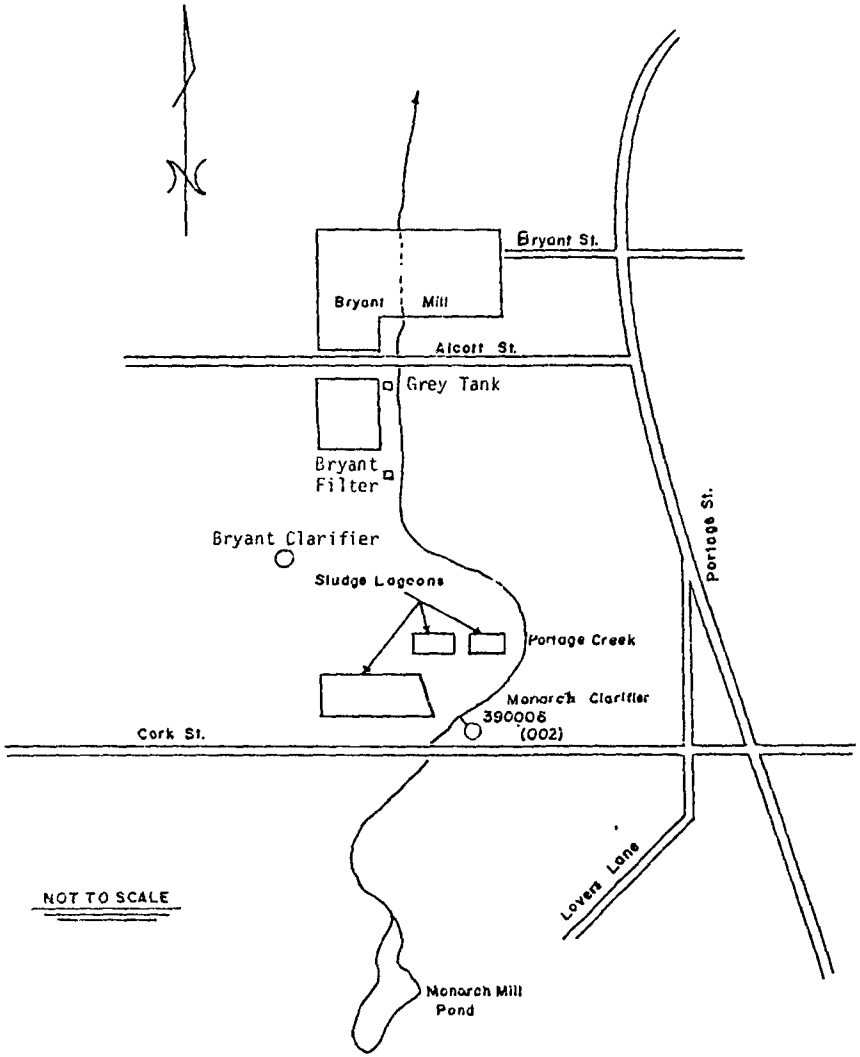
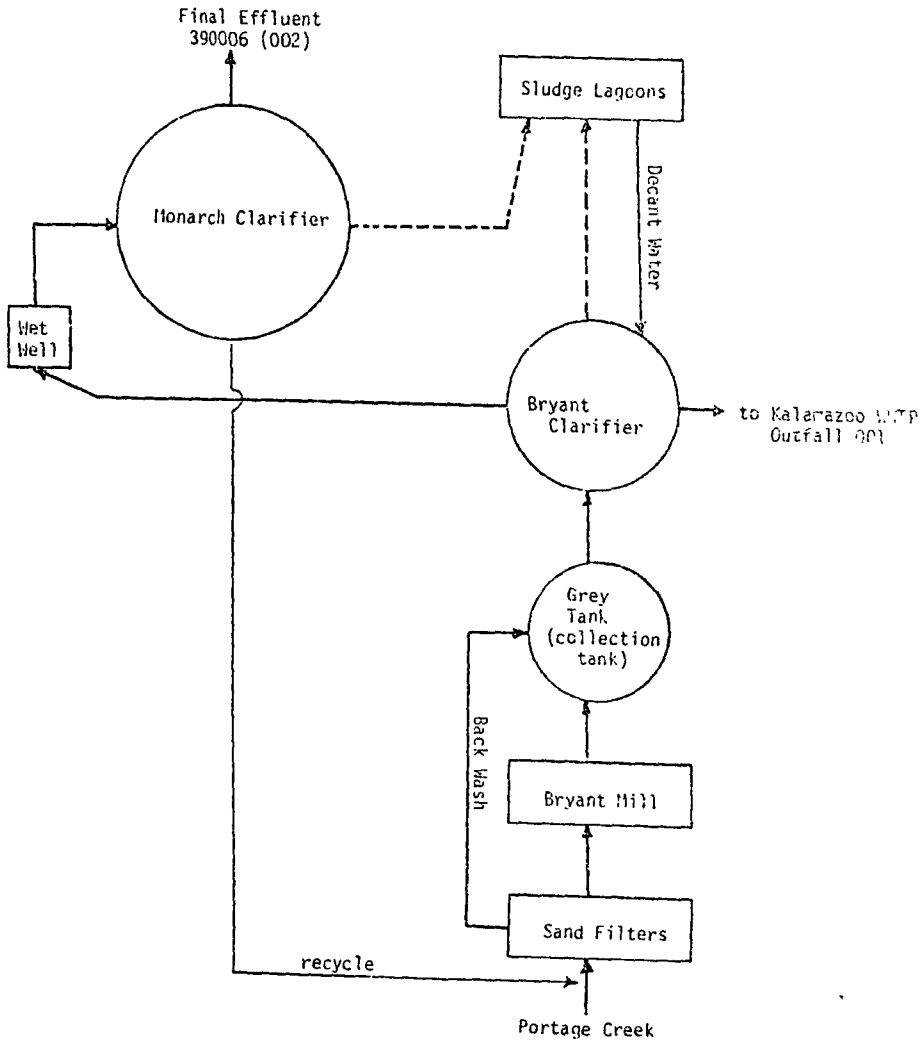


Figure 2 Allied Paper Company - Kalamazoo

Wastewater Treatment



WASTE WATER BILLING SUMMARY FOR ALLIED
JUNE , 1985

DAY	FLOW M³	SUSPENDED SOLIDS MG/L	EQS SOLIDS	SOLIDS-250 MG/L	EQS SUR SOLIDS	SURCHARGE	BOD MG/L	EQ BOD	BOD-250 MG/L	EQ SUR BOD	SURCHARGE	TOTAL SURCHARGE
1	2012	56	112.7	0	0.0	$ 0.00	258	503.1	0	0.0	$ 0.00	$ 0.00
2	2868	380	1037.4	180	286.0	$ 61.98	275	731.5	25	66.5	$ 12.04	$ 74.02
3	2983	172	513.0	0	0.0	$ 0.00	215	641.3	0	0.0	$ 0.00	$ 0.00
4	3033	48	157.3	0	0.0	$ 0.00	205	606.3	0	0.0	$ 0.00	$ 0.00
5	2882	24	68.7	0	0.0	$ 0.00	262	749.9	12	34.3	$ 6.21	$ 6.21
6	2808	36	101.1	0	0.0	$ 0.00	255	716.4	5	14.0	$ 2.53	$ 2.53
7	4983	100	498.3	0	0.0	$ 0.00	300	1470.8	50	245.1	$ 44.36	$ 44.36
8	2964	64	189.7	0	0.0	$ 0.00	243	720.3	0	0.0	$ 0.00	$ 0.00
9	3018	64	193.1	0	0.0	$ 0.00	223	673.0	0	0.0	$ 0.00	$ 0.00
10	2550	312	795.5	22	56.1	$ 13.07	360	994.3	140	356.9	$ 64.60	$ 77.67
11	1847	168	310.4	0	0.0	$ 0.00	246	454.5	0	0.0	$ 0.00	$ 0.00
12	1730	84	145.3	0	0.0	$ 0.00	246	425.5	0	0.0	$ 0.00	$ 0.00
13	2167	64	138.7	0	0.0	$ 0.00	270	585.2	18	43.3	$ 7.84	$ 7.84
14	4095	64	262.1	0	0.0	$ 0.00	287	1175.3	37	151.5	$ 27.42	$ 27.42
15	3414	140	478.0	0	0.0	$ 0.00	272	928.6	28	75.1	$ 13.59	$ 13.59
16	3232	80	258.6	0	0.0	$ 0.00	228	736.9	0	0.0	$ 0.00	$ 0.00
17	4785	42	201.0	0	0.0	$ 0.00	310	1483.3	68	287.1	$ 51.97	$ 51.97
18	2678	104	278.5	0	0.0	$ 0.00	352	942.5	102	273.1	$ 49.43	$ 49.43
19	2806	60	168.1	0	0.0	$ 0.00	406	1141.5	185	446.5	$ 80.45	$ 80.45
20	3705	52	196.8	0	0.0	$ 0.00	246	931.1	0	0.0	$ 0.00	$ 0.00
21	4122	56	230.8	0	0.0	$ 0.00	243	1001.6	0	0.0	$ 0.00	$ 0.00
22	2424	36	87.3	0	0.0	$ 0.00	318	770.8	68	164.8	$ 29.83	$ 29.83
23	2487	60	277.4	0	0.0	$ 0.00	307	1064.4	57	197.6	$ 35.77	$ 35.77
24	3060	84	324.2	0	0.0	$ 0.00	307	1184.9	57	220.0	$ 39.82	$ 39.82
25	2378	40	95.1	0	0.0	$ 0.00	370	879.9	120	285.4	$ 51.66	$ 51.66
26	3755	72	270.4	0	0.0	$ 0.00	410	1539.7	160	600.9	$ 108.76	$ 108.76
27	2439	51	124.4	0	0.0	$ 0.00	257	626.8	7	17.1	$ 3.10	$ 3.10
28	2963	448	1327.4	156	462.1	$ 109.07	308	912.6	58	171.8	$ 31.10	$ 140.17
29	2909	36	104.7	0	0.0	$ 0.00	260	756.4	18	52.1	$ 5.27	$ 5.27
30	2687	48	129.0	0	0.0	$ 0.00	220	591.1	0	0.0	$ 0.00	$ 0.00
TOTALS	92893		9071.0		708.3	$ 184.12		26159.5		3078.1	$ 665.75	$ 849.87

DAY	250-SOLIDS MG/L	CREDIT EQS SOLIDS	CREDIT	250-BOD MG/L	EQ CREDIT BOD	CREDIT	TOTAL CREDIT	MAXIMUM CREDIT	ALLOWED CREDIT - LAB FEE
1	234	470.9	$ 109.72	0	0.0	$ 0.00	$ 109.72	$ 183.14	$ 77.72
2	0	0.0	$ 0.00	0	0.0	$ 0.00	$ 0.00	$ 242.07	$ 0.00
3	118	351.9	$ 81.99	35	104.4	$ 18.90	$ 100.89	$ 271.41	$ 88.89
4	250	983.3	$ 229.11	45	177.0	$ 32.04	$ 261.15	$ 357.94	$ 228.15
5	266	761.3	$ 177.38	0	0.0	$ 0.00	$ 177.38	$ 260.46	$ 145.38
6	254	713.5	$ 166.25	0	0.0	$ 0.00	$ 166.25	$ 255.54	$ 134.25
7	198	931.5	$ 217.04	0	0.0	$ 0.00	$ 217.04	$ 446.15	$ 185.04
8	226	669.9	$ 156.09	7	20.7	$ 3.75	$ 159.84	$ 269.73	$ 127.84
9	226	682.0	$ 158.91	27	81.5	$ 14.75	$ 173.66	$ 274.62	$ 141.66
10	0	0.0	$ 0.00	0	0.0	$ 0.00	$ 0.00	$ 232.03	$ 0.00
11	122	225.4	$ 52.52	1	7.4	$ 1.34	$ 53.86	$ 160.12	$ 21.86
12	246	356.3	$ 83.02	1	6.9	$ 1.25	$ 84.27	$ 157.41	$ 52.27
13	226	488.8	$ 114.12	0	0.0	$ 0.00	$ 114.12	$ 187.22	$ 82.12
14	228	825.4	$ 215.62	0	0.0	$ 0.00	$ 215.62	$ 372.61	$ 183.62
15	150	512.1	$ 119.32	0	0.0	$ 0.00	$ 119.32	$ 310.88	$ 87.32
16	210	674.7	$ 158.14	22	71.1	$ 12.87	$ 171.01	$ 284.11	$ 138.01
17	248	1186.7	$ 276.50	0	0.0	$ 0.00	$ 276.50	$ 435.43	$ 244.50
18	188	498.8	$ 116.03	0	0.0	$ 0.00	$ 116.03	$ 243.65	$ 84.03
19	230	659.6	$ 153.69	0	0.0	$ 0.00	$ 153.69	$ 260.98	$ 121.69
20	238	880.8	$ 205.09	1	15.1	$ 2.73	$ 207.82	$ 344.44	$ 180.82
21	234	964.5	$ 224.73	7	28.9	$ 5.23	$ 229.96	$ 375.09	$ 197.96
22	254	615.7	$ 143.46	0	0.0	$ 0.00	$ 143.46	$ 230.58	$ 111.46
23	218	728.1	$ 169.65	0	0.0	$ 0.00	$ 169.65	$ 315.58	$ 137.65
24	208	785.1	$ 185.26	0	0.0	$ 0.00	$ 185.26	$ 351.22	$ 153.26
25	258	584.5	$ 138.52	0	0.0	$ 0.00	$ 138.52	$ 216.41	$ 106.52
26	218	818.7	$ 190.76	0	0.0	$ 0.00	$ 190.76	$ 341.75	$ 158.76
27	238	583.8	$ 135.84	0	0.0	$ 0.00	$ 135.84	$ 221.89	$ 103.84
28	0	0.0	$ 0.00	0	0.0	$ 0.00	$ 0.00	$ 269.62	$ 0.00
29	254	738.9	$ 172.16	0	0.0	$ 0.00	$ 172.16	$ 264.73	$ 140.16
30	242	650.2	$ 151.50	30	80.6	$ 14.59	$ 166.09	$ 244.48	$ 134.09
TOTALS		18485.8	$ 4307.22		593.6	$ 107.55			$ 3550.67

USER FEE	$ 4.50
COMMODITY CHARGE (FLOW)	
92293 M3 @ $ 0.32 / CUBIC METER =	29535.60
TOTAL SURCHARGES	849.87
TOTAL CHARGES	$ 30389.97
LESS CREDITS	- 3550.67
TOTAL DUE	$ 26839.30

14112 G.B.

WASTE WATER BILLING SUMMARY FOR ALLIED
JULY , 1985

DAY	FLOW M³	SUSPENDED SOLIDS MG/L	KGS SOLIDS	SOLIDS-200 MG/L	KGS SUR SOLIDS	SURCHARGE	BOD MG/L	KG BOD	BOD-250 MG/L	KG SUR BOD	SURCHARGE	TOTAL SURCHARGE
1	3726	68	253.5	0	0.0	$ 0.00	302	1145.0	52	193.0	$ 35.10	$ 35.10
2	4135	64	264.3	0	0.0	$ 0.00	305	1258.3	55	227.1	$ 41.11	$ 41.11
3	0	50	0.0	0	0.0	$ 0.00	290	0.0	40	0.0	$ 0.00	$ 0.00
4	333	30	17.9	0	0.0	$ 0.00	30	44.7	0	0.0	$ 0.00	$ 0.00
5	1370	32	43.8	0	0.0	$ 0.00	45	126.4	0	0.0	$ 0.00	$ 0.00
6	709	144	102.1	0	0.0	$ 0.00	130	92.2	0	0.0	$ 0.00	$ 0.00
7	1197	44	52.7	0	0.0	$ 0.00	175	209.5	0	0.0	$ 0.00	$ 0.00
8	3201	24	76.8	0	0.0	$ 0.00	217	694.6	0	0.0	$ 0.00	$ 0.00
9	3063	240	672.7	0	0.0	$ 0.00	222	622.2	0	0.0	$ 0.00	$ 0.00
10	2326	40	93.2	0	0.0	$ 0.00	230	535.9	0	0.0	$ 0.00	$ 0.00
11	1768	64	114.4	0	0.0	$ 0.00	265	473.0	15	26.8	$ 4.05	$ 4.05
12	1648	44	72.5	0	0.0	$ 0.00	246	405.4	0	0.0	$ 0.00	$ 0.00
13	3667	60	220.0	0	0.0	$ 0.00	334	1225.1	104	381.4	$ 40.03	$ 40.03
14	2877	36	74.8	0	0.0	$ 0.00	292	696.5	42	87.2	$ 15.70	$ 15.70
15	2123	22	47.1	0	0.0	$ 0.00	275	558.8	25	78.1	$ 14.14	$ 14.14
16	3337	40	266.2	0	0.0	$ 0.00	312	1038.9	62	206.3	$ 37.34	$ 37.34
17	3623	76	100.7	0	0.0	$ 0.00	255	866.0	5	13.1	$ 2.37	$ 2.37
18	3701	336	1243.5	46	170.2	$ 30.66	370	1369.4	120	444.1	$ 80.38	$ 120.04
19	2625	40	105.0	0	0.0	$ 0.00	290	761.3	40	105.0	$ 19.01	$ 19.01
20	2640	56	150.1	0	0.0	$ 0.00	305	817.6	55	147.4	$ 26.68	$ 26.68
21	3442	28	96.4	0	0.0	$ 0.00	220	761.7	0	0.0	$ 0.00	$ 0.00
22	3338	30	99.8	0	0.0	$ 0.00	277	924.9	27	62.9	$ 11.38	$ 11.38
23	3047	66	207.2	0	0.0	$ 0.00	272	828.8	22	67.0	$ 12.13	$ 12.13
24	3696	84	310.5	0	0.0	$ 0.00	280	1034.9	30	110.9	$ 20.07	$ 20.07
25	4050	44	205.0	0	0.0	$ 0.00	205	854.0	0	0.0	$ 0.00	$ 0.00
26	4751	44	182.6	0	0.0	$ 0.00	230	954.7	0	0.0	$ 0.00	$ 0.00
27	3215	56	124.0	0	0.0	$ 0.00	240	531.6	0	0.0	$ 0.00	$ 0.00
28	2635	84	220.5	0	0.0	$ 0.00	220	577.5	0	0.0	$ 0.00	$ 0.00
29	3030	100	303.0	0	0.0	$ 0.00	285	1031.7	45	129.8	$ 23.39	$ 23.39
30	3676	34	88.3	0	0.0	$ 0.00	270	993.1	20	73.6	$ 13.32	$ 13.32
31	3245	40	129.8	0	0.0	$ 0.00	325	1054.6	75	243.4	$ 44.06	$ 44.06
TOTALS	83887		8133.2		170.2	$ 30.66		22410.0		2377.4	$ 478.14	$ 508.80

DAY	200-SOLIDS MG/L	CREDIT KGS SOLIDS	CREDIT	250-BOD MG/L	KG CREDIT BOD	CREDIT	TOTAL CREDIT	MAXIMUM CREDIT	ALLOWED CREDIT - LAB FEE
1	222	827.4	$ 148.93	0	0.0	$ 0.00	$ 148.93	$ 338.15	$ 148.93
2	226	933.8	$ 217.44	0	0.0	$ 0.00	$ 217.44	$ 375.74	$ 185.44
3	231	0.0	$ 0.00	0	0.0	$ 0.00	$ 0.00	$ 0.00	$ 0.00
4	270	241.1	$ 56.10	200	178.6	$ 32.33	$ 88.51	$ 81.26	$ 56.51
5	250	510.4	$ 118.87	185	366.1	$ 65.96	$ 185.83	$ 180.05	$ 153.83
6	240	102.5	$ 23.88	120	85.1	$ 15.40	$ 39.28	$ 84.52	$ 7.52
7	266	284.5	$ 66.22	75	89.8	$ 16.25	$ 82.47	$ 108.93	$ 52.47
8	266	851.5	$ 198.40	33	105.6	$ 19.11	$ 217.51	$ 291.28	$ 185.51
9	50	148.2	$ 32.07	20	76.5	$ 14.21	$ 46.28	$ 255.07	$ 14.28
10	250	582.5	$ 135.72	20	16.6	$ 3.03	$ 138.75	$ 312.03	$ 112.75
11	226	404.1	$ 94.16	0	0.0	$ 0.00	$ 94.16	$ 162.71	$ 62.16
12	246	405.4	$ 94.46	4	6.6	$ 1.19	$ 95.65	$ 148.97	$ 63.65
13	220	823.4	$ 198.51	0	0.0	$ 0.00	$ 198.51	$ 302.70	$ 164.51
14	254	527.6	$ 122.93	0	0.0	$ 0.00	$ 122.93	$ 189.01	$ 80.93
15	262	818.2	$ 190.64	0	0.0	$ 0.00	$ 190.64	$ 284.19	$ 150.64
16	210	698.7	$ 162.80	0	0.0	$ 0.00	$ 162.80	$ 302.70	$ 139.80
17	271	981.2	$ 228.93	0	0.0	$ 0.00	$ 228.93	$ 230.06	$ 90.93
18	0	0.0	$ 0.00	0	0.0	$ 0.00	$ 0.00	$ 336.79	$ 0.00
19	250	656.3	$ 152.92	0	0.0	$ 0.00	$ 152.92	$ 228.88	$ 120.92
20	234	627.1	$ 146.11	0	0.0	$ 0.00	$ 146.11	$ 243.88	$ 116.11
21	262	901.8	$ 210.12	20	68.8	$ 12.45	$ 222.57	$ 312.81	$ 190.57
22	260	805.3	$ 187.63	0	0.0	$ 0.00	$ 187.63	$ 311.05	$ 189.63
23	222	676.4	$ 157.60	0	0.0	$ 0.00	$ 157.60	$ 277.28	$ 123.60
24	206	761.4	$ 177.41	0	0.0	$ 0.00	$ 177.41	$ 338.34	$ 145.41
25	240	1145.9	$ 266.99	45	289.5	$ 52.31	$ 304.93	$ 483.88	$ 274.93
26	246	1021.1	$ 237.92	20	83.8	$ 15.02	$ 252.94	$ 377.74	$ 220.94
27	234	518.3	$ 120.76	10	32.2	$ 4.82	$ 125.78	$ 301.57	$ 92.78
28	208	549.3	$ 128.01	30	78.5	$ 14.26	$ 142.27	$ 238.81	$ 168.27
29	190	701.1	$ 163.38	0	0.0	$ 0.00	$ 163.38	$ 335.70	$ 131.38
30	246	978.3	$ 227.96	0	0.0	$ 0.00	$ 227.96	$ 334.70	$ 185.96
31	250	811.3	$ 189.03	0	0.0	$ 0.00	$ 189.03	$ 395.30	$ 157.03
TOTALS		18888.1	$ 4351.96		1116.3	$ 250.17			$ 3683.51

USER FEE $ 4.50
COMMODITY CHARGE (FLOW)
85007 M3 @ $ 0.32 / CUBIC METER = 27202.24
TOTAL SURCHARGES 509.80

TOTAL CHARGES $ 27716.54
LESS CREDITS 3683.51

TOTAL DUE $ 24033.03

Allied Paper Lab Data

Date	TSS mg/l	BOD mg/l
9/7/84	5	--
9/13/84	18	186
9/20/84	24	85
9/27/84	124	180
10/4/84	148	230
10/11/84	64	310
10/18/84	52	99
10/25/84	107	150
11/1/84	210	138
11/15/84	116	--
11/26/84	104	83
11/29/84	98	144

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.071					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
NICKEL	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	4.810		mg/l	03/07/89	GRAB	08:30 AM
	2.820		mg/l	03/09/89	GRAB	08:25 AM
	1.140		mg/l	06/20/89	GRAB	08:35 AM
	2.900		mg/l	06/21/89	GRAB	08:45 AM
	4.700		mg/l	06/22/89	GRAB	09:30 AM
Mean	3.274					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
PCB'S	0.000	*	ug/l	04/26/88	GRAB	09:40 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	02/09/88	24 HR COMP	09:45 AM
	0.000	*	ug/l	02/10/88	24 HR COMP	09:45 AM
	0.000	*	ug/l	02/11/88	24 HR COMP	09:25 AM
	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	06/02/88	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/03/88	24 HR COMP	08:45 AM
	0.000	*	ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.630		ug/l	11/30/88	24 HR COMP	09:20 AM

indicates test results below detection limits

Inter-Office

MEMO

City of Kalamazoo

To Richard G. Simms, Wastewater Superintendent Date May 12, 1980

From Kenneth Leanin, Laboratory Supervisor

Regarding Allied Paper Mill Samples

The table below summarizes the data obtained from the Allied Paper Mill Sampling that was recently carried out.

DATE	BOD mg/l	SS mg/l	pH
4-21-80	81	23	6.5
4-22-80	60	28	7.1
4-23-80	111	16	6.8
4-24-80	126	98	6.9
4-25-80	103	28	6.5
4-27-80	71	30	6.3
4-28-80	67	60	6.4
4-29-80	64	50	6.4
4-30-80	90	65	6.9
5-1-80	85	52	6.8
5-2-80	120	86	6.6
5-3-80	80	62	6.7
5-4-80	90	48	6.7

These figures are comparable to those obtained from Allied's normal weekly sample. If more data is needed, please let me know so that daily sampling and analysis can be resumed.

KL:pd
cc: File

Public Works Donald H. Swets, Director 9/30/69

Mr. James L. Caplinger, City Manager

Allied Paper Company Liquid Wastes

At 8:13 A.M. Monday, September 29 the Allied Paper Company stopped the discharge from the Bryant Clarifier from going into Portage Creek and began directing this flow to the southwest interceptor. We will therefore now receive the effluent from the Bryant settling tank into our sewerage system.

An inspection of Portage Creek was made yesterday morning which indicated a significant improvement in the creek, however there is still a fairly high degree of coloration which comes principally from the effluent from the Monarch Mill settling tank being discharged into Portage Creek at a point just north of Cork Street. I would anticipate that with the passage of time, and the flushing out of the Bryant Mill Pond, Portage Creek will show further improvement, however it will probably continue to have a certain degree of coloration.

At one time it was thought that it might be desirable to have a certain amount of publicity regarding this reduction in pollution of Portage Creek, however in talking with Jack Gilman, Vice President of Allied Paper, they have had some second thoughts on the matter, consequently flow cut-over ceremony was not scheduled. The reasoning behind this is that they have indicated that they would do this prior to October 1, and this was announced and made public, and they are just doing what they said they would do. I believe there was also some concern that this might focus attention to the fact that the load on our treatment facilities and therefore the solids loading is being increased and there might be an adverse reaction to that what with our current solids disposal problems. I believe we have responded to this latter aspect at an open Commission meeting some weeks ago, hence I was not too concerned about this aspect, but they seemed to be.

Donald H. Swets
Director of Public Works

DHS:rc
cc: D. H. Swets
O. K. Loen
L. M. Pratt
File

0.8331 × 8.34 = 6,996,426# FLOW

9397# SOLIDS = 1343 ppm

949# BOD = 136 ppm

2.5 × 8.34 × 1343 = 28,000# IN 1977

THIS WOULD INCREASE SOLIDS TO PRIM. SETT. TANKS BY APP. 78% (IGNORING RE-CYCLE)

2.5 MGD = 28,000# solids
1.2 " = 13,443# "
1.6 " = 17,916# "

36,000# SOLIDS TO PRIM. SETT. INCL. RECYCLE
9,397# " FROM ANNIED IF BYPASSING NOW

ASSUMING WE CAN HANDLE THRU PRIMARY, 28,000# IS APP. EQUIV. TO ½ OF A ZIMPRO UNIT.
WHAT ABOUT VACUATOR? RAPS?

SET UP MTNG. WITH LES & DON

CITY OF KALAMAZOO, MICHIGAN

January 27, 1975

Mr. U. G. Stoeffler, Manager
Process Development
Allied Paper Incorporated
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Les:

As I indicated in our phone conversation last week, and in response to your letter of earlier this month, it is essential that cognizance be taken of the needs of Allied Paper as we develop our water pollution control "Facilities Plan". As you know, the Step 1 Facilities Plan for which we have requested a state and federal grant is the part of the three step grant process which leads up to the design and construction of water pollution control facilities in Steps 2 and 3 respectively. We need to work very closely with you, so that the needs of Allied Paper are met in this water pollution control plan.

In response to your specific inquiry having to do with increasing your present flow of about 1 MGD to approximately 2 MGD, it would appear that this could be accommodated. Certainly it is important to the City of Kalamazoo that its industries be well served by the facilities of this City.

In our conversation you indicated that you would be sending me the results of your testing, and I would look forward to seeing that, and to working with you as we develop our facilities plan over the next number of months. Highest personal regards.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS:rc
cc: L. M. Pratt
O. K. Loen
D. H. Swets
File

Public Works Donald H. Swets, Director 3/3/70

Mr. James L. Caplinger, City Manager

Allied Paper Corporation - Water Pollution Control

As a follow-up to our meeting with top officials for the Allied Paper Corporation this morning, I feel that they have done a tremendous job of water pollution control. By comparing the third quarter of 1969 with the fourth quarter thereof, it is very apparent as to the impact on their wastewater loading that was made by tieing in the effluent from the Bryant Clarifier to the Municipal Wastewater System. I think it is very fortunate that we were able to be of service to this large industry in assisting them to achieve the tremendous reduction in bio-chemical oxygen demand loading to the Portage Creek and the Kalamazoo River.

In making a percentage comparison between the loadings for 1961 as compared to the first quarter of 1970, the suspended solids being discharged into Portage Creek have been reduced 98.53%, and to the River 99.23%. The BOD loading for this same period has shown a reduction of 96.2% into Portage Creek and 95.35% into the Kalamazoo River. The total wastewater flow has been cut approximately in half both to the River and to Portage Creek. The effects of the water pollution control measures which have been instituted by the Allied Paper Corporation can readily be seen by looking at Portage Creek and the Kalamazoo River today comparing it with the appearance that it used to have. Over the last number of years, the Allied Paper Corporation has accomplished a tremendous job in reducing water pollution from their facilities, and should be highly commended for this.

Donald H. Swets
Director of Public Works

DHS:rc
cc: D. H. Swets
O. K. Loen
L. M. Pratt
File

October 2, 1969

Mr. Robert Courchaine
Regional Engineer
Bureau of Water Management
Department of Natural Resources
Stevens T. Mason Building
Lansing, Michigan 48926

Dear Bob:

We are pleased to announce that Allied Paper as of 8:00 on Monday morning, September 29, 1969, began sending the effluent from its Bryant clarifier to the City of Kalamazoo interceptor.

We appreciate the fine cooperation we have had with you and other members of the staff in helping us with this plan.

Best personal regards.

Yours very truly,

ALLIED PAPER INCORPORATED

U. G. Stoeffler
Manager Process Development

UGS:ks

cc: R. M. Levy - Allied
E. J. Gilman - Allied
Mr. Donald Swets - Dept. of Public Works

RECEIVED CITY OF KALAMAZOO
OCT 3 1969
DEPT. OF PUBLIC WORKS

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

May 17, 1974

Mr. Leonard Pratt
Superintendent of Water Waste
Treatment Plant
City of Kalamazoo
241 West South Street
Kalamazoo, Michigan 49006

Dear Len:

Pursuant to our recent conversation concerning the quality of our Bryant clarifier influent, I have copied the Waste Tank Treatment test sheets for the period of March 5 to April 25, 1974. These results show an average daily suspended solids of 9,397#, average daily BOD of 949#. The effluent results are also shown.

We would request permission to be able to bypass the Bryant clarifier on an emergency basis when the clarifier has to be shut down for repair. Our emergency plan would be to pipe the influent from the Bryant division, and put the flow, approximately 2-2½ MGD, directly into the effluent line running to your 48" interceptor. As you know, Orlin Loen has already given approval for us to send 3 MGD for a short period of time for the same emergency plan.

I am sure that our influent would not cause any problems in your primary and secondary stages for a short period of time. As you can see, we are able to get 98% solids removed in our primary stage; therefore, this waste would not carry solids over into your secondary stage.

We appreciate your cooperation in helping us develop emergency plans when our clarifiers have to be out of service for short periods of time.

Yours very truly,
ALLIED PAPER INCORPORATED

U. G. Stoeffler, Manager
Process Development

GS:rb
closures
ctated 5-16-74)
E. J. Gilman, Allied Paper Incorporated
R. J. Willie, Allied Paper Incorporated

		SOLIDS		B.O.D.	
Date	Flow	Influent	Effluent	Influent	Effluent
3-5	0.574	9,335	190	540	245
3-7	0.941	11,995	190	860	405
3-12	0.814	11,595	110	890	320
3-19	0.748	8,035	90	955	330
3-26	0.840	15,085	135	960	305
3-28	0.861	8,295	65	910	360
4-2	0.828	7,055	55	830	435
4-4	0.886	11,765	45	890	475
4-9	1.168	8,495	75	1,250	535
4-11	0.923	10,005	135	1,110	470
4-16	0.789	5,935	75	730	370
4-18	0.729	6,235	85	700	365
4-23	0.894	11,675	245	1,465	430
4-25	0.750	6,055	155	1,200	400
Average	.8389	9,397	118	949	388.5

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 6-5-89

TIME: 1:30 pm

(LT) - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

TALKED WITH: Andrew Watson

REPRESENTING: Performance Papers, Inc.

SUBJECT: PCB Limit

COMMENTS: (1) L.T.W.Q.B.E.L. - Question re: how we addressed (Discussed plan, sampling and bioassay - He will look into w/ MDNR)

(2) Discussed solids/pH excursions - I Told him I will write a letter detailing the problems & requesting a follow-up.
(Send letter to R. Richard Eaton's attention - he & J. Roth leaving at then end of June!)

ROUTE TO: FILE - Performance Papers (ALLIED)

SIGNATURE: [signature]

3-10-88 ALLIED PAPER CO. 2:30 PM

PORTAGE CREEK – FROM WEST OF CREEK ON ALCOTT,

OIL SPILL – "PETROLEUM" ODOR ON CREEK

COUPLE DAYS AGO,

PER R. EATON (HAVE KENT CHECK INTO)

LOOK INTO

Notice of Pending Lawsuit – Aug. '86 (PCB 151 NOTIFICATION FROM STATE ON JUNE '86)

meeting w/ Mayor & City Atty – Aug. '87 – Background info.

2 DEC '87 – LAWSUIT FILED BY STATE

PROPOSED REMEDIAL ACTION PLAN

– based on containment

LIMNO-TECH (ENVIRONMENTAL CONSULTANTS)

MILL A – ON EDGE OF BRYANT MILL POND

DEINK PROCESS USED. 1970 – SHUT DOWN.

STREAM DAMMED OFF IN 1894 – used for power generation initially

several areas ACTUALLY

CEASED PRIOR TO WW II

Level of gate at Alcott St. Dam – verbal agreement w/ City on this

(FLOOD CONTROL BASICALLY)

KAR Laboratories, Inc.

ANALYTICAL RESULTS

To: United Environmental Tech., Inc.

Project No: 910835
Report Date: 4/29/91

Project Desc.: Emergency analysis of aqueous sample from Allied Paper Proj.89-002-02.

Sample No.:910835-01 Sample type: aqueous Received on: 4/26/91
ID: "Clarifier discharge, 4/26/91, 2:40"

PCB, total	<0.1 ug/L
Cyanide, total	<0.02 mg/L
Cadmium, total	<0.005 mg/L
Chromium, total	<0.01 mg/L
Copper, total	0.02 mg/L
Lead, total	<0.05 mg/L
Mercury, total	<0.0005 mg/L
Nickel, total	0.04 mg/L
Zinc, total	0.03 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

Analytical Laboratory Report
City of Kalamazoo
FECL #: 6806-91-E1 et al.
May 28, 1991
Page Two

FECL #:	**6806-91-E1**
Tag:	1 Allied Clarifier AFC 12391

Organic

PCB	<0.0001 mg/l

FECL #:	**6807-91-E1**	**6807-91-E2**
Tag:	1 Borroughs BLS 12891	2 Borroughs BL3 12891

Method 601 - Purgeable Halocarbons

Bromodichloromethane	<0.001	mg/l	<0.001	mg/l
Bromoform	<0.001	mg/l	<0.001	mg/l
Bromomethane	<0.001	mg/l	<0.001	mg/l
Carbon tetrachloride	<0.001	mg/l	<0.001	mg/l
Chlorobenzene	<0.001	mg/l	<0.001	mg/l
Chloroethane	<0.001	mg/l	<0.001	mg/l
2-Chloroethylvinyl ether	<0.001	mg/l	<0.001	mg/l
Chloroform	<0.001	mg/l	<0.001	mg/l
Chloromethane	<0.001	mg/l	<0.001	mg/l
Dibromochloromethane	<0.001	mg/l	<0.001	mg/l
1,2-Dichlorobenzene	<0.001	mg/l	<0.001	mg/l
1,3-Dichlorobenzene	0.016	mg/l	<0.001	mg/l
1,4-Dichlorobenzene	<0.001	mg/l	<0.001	mg/l
Dichlorodifluoromethane	<0.001	mg/l	<0.001	mg/l
1,1-Dichloroethane	<0.001	mg/l	<0.001	mg/l
1,2-Dichloroethane	<0.001	mg/l	<0.001	mg/l
1,1-Dichloroethene	<0.001	mg/l	<0.001	mg/l
trans-1,2-Dichloroethene	<0.001	mg/l	<0.001	mg/l
1,2-Dichloropropane	<0.001	mg/l	<0.001	mg/l
cis-1,3-Dichloropropene	<0.001	mg/l	<0.001	mg/l
trans-1,3-Dichloropropene	<0.001	mg/l	<0.001	mg/l
Methylene chloride	<0.001	mg/l	<0.001	mg/l
1,1,2,2-Tetrachloroethane	<0.001	mg/l	<0.001	mg/l
Tetrachloroethene	<0.001	mg/l	<0.001	mg/l
1,1,1-Trichloroethane	<0.001	mg/l	<0.001	mg/l
1,1,2-Trichloroethane	<0.001	mg/l	<0.001	mg/l
Trichloroethene	<0.001	mg/l	<0.001	mg/l
Trichlorofluoromethane	<0.001	mg/l	<0.001	mg/l
Vinyl chloride	<0.001	mg/l	<0.001	mg/l

Allied Data File

SEG LABORATORIES, INC.

August 25, 1988

City of Kalamazoo
1415 N. Harrison
Kalamazoo, Michigan 49007

Attn: Dr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on July 20, 1988.

PO#: 43111

SEG Number:	77253	77254	77255	77256
Tag:	James River #JRC 20088 8:10 A.M. 7/18/88	Inmont #INM 20088 8:35 A.M. 7/18/88	Allied Paper #APC 20088 9:15 A.M. 7/18/88	Upjohn-Bishop #UJB 20088 10:10 A.M. 7/18/88
PCB - 1016, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1221, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1232, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1242, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1248, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1254, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1260, ug/L	<0.1	<0.1	<0.1	<0.1

1120 May Street, Lansing, Michigan 48906 • (517) 374-6800 • CABLE "SNELL" • FAX (517) 374-7390
A Snell Environmental Group Company

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 1/30/90

TIME: 8:40 am

[✓] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

)

TALKED WITH: Mr Gallenberger

REPRESENTING: Performance Papers

SUBJECT: Metering water wastewater flows

COMMENTS: Telephoned Mr. Gallenberger to inform him that the proposed metering system would not include storm & roof water runoff and there for would be inadaguate.

ROUTE TO: file

SIGNATURE: Mfeulenberg

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 1/29/90

TIME: 8:30 am

[ ] - TELEPHONE CONVERSATION

[✓] - MEETING: LOCATION - Performance Papers)

TALKED WITH: Mr Mike Gallenberger

REPRESENTING: Performance Papers

SUBJECT: Metering of waste water / water flows

COMMENTS: A review of proposed metering and an actual inspection of ~~sma~~ flows to be metered resulted in my personal opinion that Mr. Gallenberger's proposed solution to adaqualty meter waste water flows was adaquate. I questioned that these meters ~~along~~ (well meter at filter bldg. and various city water meters) would measure all flows being discharged and Mr Gallenberger said yes. Informed him that approval could ~~not~~ be made by higher authority.

ROUTE TO: file

SIGNATURE: Meulenberg

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Supply
415 Stockbridge
Kalamazoo, Michigan 49001-2898
(616) 385-8149

January 23, 1990

Mr. Mike Gallenberger
Performance Papers
2030 Portage
P.O. Box 2528
Kalamazoo, MI 49001

Re: December Industrial Sewer Billing

Dear Mr. Gallenberger:

As a follow-up to our telephone conversation on January 23, 1990, the Performance Paper sewer bill will be based on the average flow for the last four days of November and the first two days of December, 1989. This averaging will only take place for the December billing. If a new metering device is not in place by February 6, 1990, your January billing will reflect the average flow of the first two days of December only.

If you have any questions, please feel free to give me a call.

Sincerely,

Jerri Barnett-Moore
Customer Service/Finance Manager

nb

c Bruce Merchant

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 1-2-90

[ ] - TELEPHONE CONVERSATION

PHONE #:

TIME: 1 30/pm

[X] - MEETING: LOCATION -

PERFORMANCE PAPERS, INC. - MAIN HEADQUARTERS

TALKED WITH: Michael Gallenberger, Ralph Merkin, Mark Wittrock, Brad

REPRESENTING: Performance Papers, Inc.

SUBJECT: Replumbing discharge around clarifier.

COMMENTS: Due to shut-down and associated freezing problems with pumps etc., they would like to "blank" off the discharge to the clarifier stilling well and divert to flow directly to the overflow weir to the sanitary sewer. Only discharge currently is from Powerhouse and roof drains (which will need to be removed eventually). We will get grab samples at the weir area and they will install a mag meter on line and have calibrated. They will do work and notify us when done for inspection and certification of calibration will be provided. We will look at last 4 days of Nov & 1st few days in Dec. 1989 to verify flows for billing.

ROUTE TO: FILE: Performance Papers, Inc.

City of Kalamazoo Personnel Present
1. Bruce Merchant
2. Kent Mottinger
3. Bob O'Day

SIGNATURE: Bruce Merchant

1:30 PM PERFORMANCE PAPERS 1-2-90

PERF. PAPER
Michael
RALPH MIRKIN
MARK
BRAD

KENT MOTTINGER
BRUCE MERCHANT
BOB O'DAY

< 4" meter on discharge from Power House >

When did meter freeze up?

Look at early Dec. '89

Grab samples @ - Weir best location.

Roof Drains to Portage Creek? - Big Project
Currently to sanitary sewer.
Planning to do soon.

Last 4 days in November & 1st few days in December 1989
- Normal flows since shutdown.

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 12/22/89 [✓] - TELEPHONE CONVERSATION

TIME: 10:30 AM [ ] - MEETING: LOCATION -

_____)

TALKED WITH: Mr. Witrock (sp)

REPRESENTING: Performance Papers

SUBJECT: Relocation of Discharge

COMMENTS: Perf. Papers called and requested a meeting to discuss discharging directly to the sewer system rather than through the clarify / lagoon system. The ~~point~~ line they want to use in the one we have tagged the valve shut. I told him that I had reservations about allowing them to open that valve due to the capability of discharging materials stored on the plant through the line undetected. We set up a meeting for 1:30 PM on Jan 2, 1990 ~~to~~ at their main office to discuss their proposal.

ROUTE TO: B. Merchant

SIGNATURE: Kent Mattingly

E CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

November 17, 1989

MR MARK NEILY
PERFORMANCE PAPERS
2030 PORTAGE ST
KALAMAZOO MI 49001

Dear Mr. Neily:

We are writing to you to advise you that your facility, PERFORMANCE PAPERS, may be subject to solid or hazardous waste management requirements pursuant to the Federal Resource Conservation and Recovery Act (PL 94-580 as amended) and State hazardous waste management regulations (Michigan Act 64 as amended). Federal regulations can be found at 40 CFR part 257 (solid waste), and 40 CFR part 260, et seq. In addition, US EPA has proposed requirements for disposal of sludge under 405(d) of the Federal Clean Water Act and for solid waste activities. These regulations, once finalized, may significantly impact the operations of your facility.

The enclosed general material describes current Federal requirements for hazardous waste generators and transporters. This packet includes descriptions of hazardous waste management requirements which may apply to your operation if it involves generating or transporting hazardous waste.

In order to assure that your operations comply with Federal, State, and local hazardous waste management regulations, please consult the above noted regulations and appropriate state and federal agencies to determine all specific requirements that apply to your operation.

Sincerely yours,

Bruce E. Merchant

Bruce E. Merchant
Industrial Services Supervisor

enc/rjg

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 1:50 PM

TIME: 11-15-89

(X) - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION - _____)

TALKED WITH: John DeWitt

REPRESENTING: Attorney -

SUBJECT: Performance Papers / ALLIED

COMMENTS:

He will call:
Tom Flannigan - works out of his home

Performance Papers had contract with Allied for use of

ROUTE TO: FILE: Performance Papers

SIGNATURE: [signature]

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 11-15-89

TIME: 11 50/Am

(X) - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION - _____)

TALKED WITH: RALPH MERKIN

REPRESENTING: PERFORMANCE PAPERS

SUBJECT: Station Power Shut-down @ Clarifier - who do we c

COMMENTS: George McClain ALLIED
Ifland, New Jersey
(201) 549-7050

John DeWitt
Barnam Rittering Smitten
Law firm in Grand Rapids
459-4186

ROUTE TO: FILE: Performance Papers

SIGNATURE: Bruce S. Merchant

9-28-94 9 a/m Performance Papers

1. Continuous pH monitoring readings on Municipal Effluent from TCA

2. % of flow in Southwest Interceptor (pH readings at that location)

3 New Contact People

1st: Mark Neily - Environmental Coordinator
2nd: John Dratnol - Engineering Supv.

Performance Papers - pH Violations
April - September 27, 1989

	DATE	pH VALUE
Fri.	April 14	6.1
Mon.	April 17	5.7
Wed.	April 19	12.7
Thur.	May 25	10.6
Tues.	May 30	12.6
Tues.	June 6	11.0
Thur.	July 6	11.7
Mon.	July 17	12.0
Thur.	August 3	10.3
Wed.	August 8	10.7
Wed.	August 16	11.9
Mon.	August 21	6.1
Thur.	August 24	6.1
Thur.	August 31	10.7
Fri.	September 1	11.8
Thur.	September 7	10.6
Wed.	September 20	6.1

NOTE: 1. Readings of pH not taken on Saturday and Sunday.
2. About 14% of samples collected over last 6 months indicate a violation.

Performance Papers - pH Violations
April - September 27, 1989

	DATE	pH VALUE
Fri.	April 14	6.1
Mon.	April 17	5.7
Wed.	April 19	12.7
Thur.	May 25	10.6
Tues.	May 30	12.6
Tues.	June 6	11.0
Thur.	July 6	11.7
Mon.	July 17	12.0
Thur.	August 3	10.3
Wed.	August 8	10.7
Wed.	August 16	11.9
Mon.	August 21	6.1
Thur.	August 24	6.1
Thur.	August 31	10.7
Fri.	September 1	11.8
Thur.	September 7	10.6
Wed.	September 20	6.1

NOTE: 1. Readings of pH not taken on Saturday and Sunday.
2. About 14% of samples collected over last 6 months indicate a violation.

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 9-26-89

TIME: 1:57 pm

[X] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION - _____)

TALKED WITH: MARTIN SMITH

REPRESENTING: PERFORMANCE PAPERS, INC.

SUBJECT: pH adjustment/monitoring

COMMENTS:

Thursday 9-28-89 9:30 AM

Mr. Gallanberger - Owner of Performance Papers

Need to discuss:

- pH monitoring & control
- pentachlorophenolic-based biocide certification status

ROUTE TO: Performance Papers

SIGNATURE: [signature]

KALAMAZOO MONTHLY OPERATING REPORT

DATE PRINTED: 28SEPT89

DATE: SEPT89

TIME: 10:27
PAGE: 11

M U N I C I P A L I N F L U E N T

DAY	FLOW	TEMP	PH	PH	DO	BOD	SOL BOD	COD	SOL COD	TOT SOL	SUS SOL	VSS
	KCM	DEG C	SU	SU	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
	A290FT	A001TT	A001AT	MI#250	MI#031	MI#004	MI#005	MI#044	MI#045	MI#123	MI#071	MI#072
01	117X	20.0	6.8N									
02	94	19.4	6.9									
03	91	19.6	6.8									
04	90N	18.8N	6.8									
05	104	19.3	6.9									
06	109	20.2	6.9									
07	111	20.3	6.9									
08	116	20.3X	6.8									
09	105	19.8	6.9									
10	101	19.6	7.0									
11												
12	104	20.1	6.8									
13	102C	19.7C	7.0C									
14												
15	105	19.3	7.0									
16	100	18.9	7.0									
17	93	18.8	6.9									
18	105	19.3	6.8									
19	107C	19.6C	6.9C									
20	113C	20.2C	6.9C									
21												
22	100	19.1	6.9									
23												
24	97C	17.7C	7.3C									
25	103C	19.0C	6.9C									
26	96	19.2	7.2X									
27	97C	19.3C	7.0C									
28												
29												
30												

KALAMAZOO MONTHLY OPERATING REPORT

DATE PRINTED: 28SEPT89 DATE: AUG 89 TIME: 10:26 PAGE: 11

M U N I C I P A L I N F L U E N T

DAY	FLOW KCM A290FT	TEMP DEG C A001TT	PH SU A001AT	PH SU MI#250	DO MG/L MI#031	BOD MG/L MI#004	SOL BOD MG/L MI#005	COD MG/L MI#044	SOL COD MG/L MI#045	TOT SOL MG/L MI#123	SUS SOL MG/L MI#071	VSS MG/L MI#072
01	86C	44.4C	6.6C									
02	99	19.5	6.5									
03												
04	101	18.4N	6.5									
05												
06												
07	99	19.1	6.7									
08	94	19.4	6.5									
09	94	19.4	6.5									
10	97	20.2X	6.6									
11	93	19.7	6.6									
12	83	19.4	6.9X									
13	77N	19.1	6.8									
14	93	19.9	6.7									
15	98	20.1	6.6									
16	100	19.9	6.9									
17	101	19.8	6.8									
18	101	19.5	6.8									
19	96	19.2	6.7									
20	92	19.0	6.8									
21	101	19.5	6.7									
22	104C	19.8C	6.6C									
23	106	20.0	6.5									
24	102	19.8	6.5									
25	102	19.8	6.5N									
26	101	19.7	6.6									
27	94	19.4	6.7									
28	110X	20.0	6.8									
29	109	20.0	6.9									
30	108	19.9	6.8									
31	106	19.8	6.8									

KALAMAZOO MONTHLY OPERATING REPORT

DATE PRINTED: 28SEPT89

DATE: JULY89

TIME: 10:25
PAGE: 11

M U N I C I P A L I N F L U E N T

DAY	FLOW	TEMP	PH	PH	DO	BOD	SOL BOD	COD	SOL COD	TOT SOL	SUS SOL	VSS
	KCM	DEG C	SU	SU	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
	A290FT	A001TT	A001AT	MI#250	MI#031	MI#004	MI#005	MI#044	MI#045	MI#123	MI#071	MI#072
01	82N	17.9N	7.4X									
02												
03												
04												
05												
06												
07												
08	86	18.3	7.2									
09												
10												
11												
12												
13												
14												
15	93	18.3	6.7									
16	87	18.1	6.8									
17	99	18.5	7.1									
18	101	18.9	7.0									
19	107	19.2	6.7									
20	111	19.5X	6.8									
21	105	19.1	6.8									
22	92	18.8	6.6N									
23	88	18.5	6.8									
24	101	19.0	6.8									
25	113X	19.3	6.8									
26	109	19.4	6.8									
27	97	19.5	6.9									
28	101	19.4	6.7									
29	89	18.9	7.0									
30	86	18.6	6.8									
31	100	11.8C	4.1C									

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 9-15-89

TIME: 9:20

[✓] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

)

TALKED WITH: Andy Watson

REPRESENTING: Performance Papers Inc

SUBJECT: Contact Person

COMMENTS: 1) per Andy, new contact person is Martin Smith - Technical Director

2) I canceled 9-20-89 Appt. till date to be announced

ROUTE TO: file

SIGNATURE: Robert C. O'Day

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Supply
415 Stockbridge
Kalamazoo, Michigan 49001-2898
(616) 385-8149

September 8, 1989

Andrew W. Watson
Senior Project Leader
Performance Papers, Inc.
P.O. Box 2528
Kalamazoo, MI 49003

Dear Mr. Watson

Enclosed are pH results for your Bryant Street clarifier discharge. Please note that on numerous occasions your facility has discharged wastewater into the sanitary sewer system which was outside the limits of 6.2-9.8 allowed by the Sewer Use Ordinance.

This office is extremely concerned with the apparent corrosive nature of the discharge at your Bryant Street clarifier and its effects on the Sanitary Sewer System. Therefore, please submit to this office by October 15, 1989 a written statement providing:

1. Explanation(s) for such corrosive discharges,
2. Action(s) to be taken to establish and maintain the pH of your Bryant Street clarifier within the limits.

Please note that your facility must be in compliance with all applicable discharge limitations by November 30, 1989.

Enclosed is a copy of the Sewer Use Ordinance for your reference. Please note those points highlighted in Sections 28-9 and 28-10.

Please contact this office with any questions or for assistance.

Sincerely,

Robert C. O'Day

Robert C. ODay
Industrial Waste Technician

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Supply
415 Stockbridge
Kalamazoo, Michigan 49001-2898
(616) 385-8149

September 8, 1989

Andrew W. Watson
Senior Project Leader
Performance Papers, Inc.
P.O. Box 2528
Kalamazoo, MI 49003

Dear Mr. Watson

Enclosed are pH results for your Bryant Street clarifier discharge. Please note that on numerous occasions your facility has discharged wastewater into the sanitary sewer system which was outside the limits of 6.2-9.8 allowed by the Sewer Use Ordinance.

This office is extremely concerned with the apparent corrosive nature of the discharge at your Bryant Street clarifier and its effects on the Sanitary Sewer System. Therefore, please submit to this office by October 15, 1989 a written statement providing:

1. Explanation(s) for such corrosive discharges,
2. Action(s) to be taken to establish and maintain the pH of your Bryant Street clarifier within the limits.

Please note that your facility must be in compliance with all applicable discharge limitations by November 30, 1989.

Enclosed is a copy of the Sewer Use Ordinance for your reference. Please note those points highlighted in Sections 28-9 and 28-10.

Please contact this office with any questions or for assistance.

Sincerely,

Robert C O'Day

Robert C. ODay
Industrial Waste Technician

Performance Papers pH violations

	samples	composite pH	Grab pH
June	22	3	1
July	20	0	2
August	23	0	6
September	4	0	3
Total	69	3	12

% grab pH violations: $\frac{12}{69} \cdot 100 = 17.4\%$

% composite pH violations: $\frac{3}{69} \cdot 100 = 4.4\%$

PERFORMANCE PAPERS:- ALLIED

DATE	TIME	pH
9-1-89	9:15 A/M	9.0/11.8
9-5-89	8:40 A/M	6.4/6.3
9-6-89	8:50 A/M	8.1/8.1
9-7-89		/10.6
9-8-89		

PERFORMANCE PAPERS - ALLIED

DATE	TIME	pH [illegible] / LAB
8-1-89	8:50 A/M	7.1/6.4
8-2	9:00 A/M	7.2/6.6
8-3	8:45 A/M	8.6/10.75
8-4	8:40 A/M	7.1/6.6
8-7	8:30 A/M	7.4/6.5
8-8	8:35 A/M	7.1/10.7
8-9	9:30 A/M	7.1/6.4
8-10	9:40 A/M	7.2/6.6
8-11	9:30 A/M	7.1/6.6
8-14	8:25 A/M	6.8/6.4
8-15	8:45 A/M	6.9/7.0
8-16	10:00 A/M	9.0/11.91
8-17	9:35 A/M	7.8/7.4
8-18	8:50 A/M	7.3/6.8
8-21	8:40 A/M	6.5/[illegible]
8-22	8:30 A/M	7.0/6.5
8-23	8:30 A/M	7.2/6.5
8-24	8:25 A/M	6.7/[illegible]
8-25	8:50 A/M	7.0/6.4
8-28	9:40 A/M	8.5/7.1
8-29	8:30 A/M	7.7/7.1
8-30	9:30 A/M	7.5/6.9
8-31	9:50 A/M	7.4/10.7

PERFORMANCE PAPERS - ALLIED

DATE	TIME	pH COMP/GRAB
7-3-89	8:45 A/M	7.6/7.4
7-5-89	8:42 A/M	8.0/7.6
7-6-89	8:45 A/M	8.4/[illegible]
7-7-89	8:30 A/M	7.2/7.3
7-10-89	8:40 A/M	7.6/6.8
7-11-89		6.8/7.2
7-12-89		7.2/6.8
7-13-89		7.3/7.1
7-14-89		7.4/6.8
7-17-89		[illegible]
7-18-89		7.0/6.6
7-19-89		7.4/7.2
7-20-89		7.2/6.4
7-21-89		6.7/7.1
7-24-89		7.2/6.6
7-25-89		7.1/7.5
7-26-89		9.6/6.6
7-27-89		7.0/6.5
7-28-89		7.1/6.4
7-31-89		7.2/6.8

PERFORMANCE PAPERS - ALLIED

ATE	TIME	pH [redacted]
2-1-89		6.5/[redacted]
2-2-89		7.2/8.0
2-5-89		8.3/6.8
2-6-89		[redacted]/7.4
2-7-89		6.8/7.6
2-8-89		6.7/7.1
2-9-89		7.6/7.3
2-10-89		6.5/7.0
2-13-89	8:50 A/M	8.8/8.0
2-14-89	8:50 A/M	9.4/6.9
2-15-89	8:40 A/M	6.8/7.2
2-16-89	8:50 A/M	7.1/7.4
2-19-89	8:45 A/M	9.0/7.9
2-20	8:35 A/M	7.4/7.1
6-21	8:45 A/M	6.7/[redacted]
6-22	9:30 A/M	7.3/7.1
6-23	8:55 A/M	8.5/[redacted]
6-26	8:50 A/M	8.7/7.8
6-27	8:55 A/M	8.3/7.9
6-28	8:40 A/M	7.5/7.5
6-29	8:35 A/M	7.9/7.9
6-30	9:00 A/M	7.2/7.7

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

August 4,1989

Mr. Richard Eaton
Performance Papers
2030 Portage St.
Kalamazoo. Michigan 49001

Dear Mr. Eaton:

As a publicly-owned treatment works, the Kalamazoo Water Reclamation Plant is required by State and Federal law to conduct an Industrial Pretreatment Program. A major facet of the program is the inspection of industrial users of the wastewater system. The inspections are essential to the proper operation of the Kalamazoo Water Reclamation Plant in that they help determine the nature of ongoing and potential discharges to the sewer system. They also serve as the basis for determining which pretreatment standards, if any, apply to the particular industry.

A representative from the Industrial Services Section plans to inspect your facility on August 29, 1989 at 9:00 a.m. If this date and time is unsuitable, please call me at 385-8157.

The major types of information to be collected during the inspection include:

1. Description of process(es)
2. Wastewater generation and disposal
3. Disposal of chemicals and sludges
4. Materials used and stored on site
5. Spill prevention techniques

The inspection process would be greatly facilitated if you would have available any drawings of the plumbing and drainage system, a list of materials stored on site, Material Safety Data Sheets for chemicals identified only by name brand, and any other information related to items 1-5 above.

Please contact me if you have any questions.

Sincerely,

Robert C. O'Day

Robert C. O'Day,
Industrial Waste Technician

y/c File

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 6-5-89

TIME: 1:30 pm

(LH) - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

)

TALKED WITH: Andrew Watson

REPRESENTING: Performance Papers, Inc.

SUBJECT: PCB Limit

COMMENTS: (1) L.T.W.Q.B.E.L. - Questions re: how we addressed (Discussed plan, sampling and bioassays - He will look into w/ MDNR)

(2) Discussed solids/pH excursions - I Told him I will write a letter detailing the problems & requesting a follow-up.
(Send letter to R. Richard Eaton's attention - he & J. Roth leaving at then end of June!)

ROUTE TO: FILE - Performance Papers (ALLIED)

SIGNATURE: [signature]

PERFORMANCE PAPERS, INCORPORATED

SEQUENTIAL SAMPLING

Bottle Number	Date	Time	pH
1	5/26/89	3:10- 4:40 p.m.	7.1
2	5/26/89	5:10- 6:40 p.m.	6.4
3	5/26/89	7:10- 8:40 p.m.	6.6
4	5/26/89	9:10-10:40 p.m.	6.7
5	5/26/89	11:10-12:40 a.m.	6.6
6	5/27/89	1:10- 2:40 a.m.	6.8 (Low vol. 150mL)
7	5/27/89	3:10- 4:40 a.m.	6.7
8	5/27/89	5:10- 6:40 a.m.	6.9
9	5/27/89	7:10- 8:40 a.m.	7.3
10	5/27/89	9:10-10:40 a.m.	11.7*
11	5/27/89	11:10-12:40 p.m.	11.7*
12	5/27/89	1:10- 2:40 p.m.	9.9*
13	5/27/89	3:10- 4:40 p.m.	8.6
14	5/27/89	5:10- 6:40 p.m.	No Sample
15	5/27/89	7:10- 8:40 p.m.	8.5 (Low vol. 25mL)
16	5/27/89	9:10-10:40 p.m.	7.8
17	5/28/89	11:10-12:40 a.m.	7.7
18	5/28/89	1:10- 2:40 a.m.	7.7
19	5/28/89	3:10- 4:40 a.m.	7.7
20	5/28/89	5:10- 6:40 a.m.	7.7
21	5/28/89	7:10- 8:40 a.m.	7.8
22	5/28/89	9:10-10:40 a.m.	9.6*
23	5/28/89	11:10-12:40 p.m.	12.2*
24	5/28/89	1:10- 2:40 p.m.	12.3*

* Same time of day

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 5-25-89

TIME: 9:40 am

[X] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

TALKED WITH: John Roth

REPRESENTING: Performance Papers, Inc.

SUBJECT: Annual Shut-down of mill

COMMENTS: Instead of the "annual" shut down occurring on the 4th of July weekend, this years shutdown & clean-up will occur over Memorial Day weekend. By-pass will be open but only "minor" flows will be discharged during this time. Shutdown to start Sat. AM 5-27-89 and startup should be Tues. AM 5-30-89.

ROUTE TO: K. Mottinger
File

SIGNATURE: [signature]

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 4-20-89

TIME: 8:12 Am

[X] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

)

TALKED WITH: R. RICHARD EATON

REPRESENTING: PERFORMANCE PAPERS

SUBJECT: pH violations on 4-17-89 & 4-18-89

COMMENTS: Readings were taken on the above dates and are detailed below:

MON. 4-17-89 pH = 5.7

WED. 4-19-89 pH = 12.7

Informed Mr. Eaton of the difficulty - he will look into and have Andy Watson or John Roth call me back.

ROUTE TO: Performance Papers

SIGNATURE: Bruce E Merkin

CONFIRMATION OF VERBAL CORRESPONDENCE

TE: 4-20-89

TIME: 1 35 pm

(X) - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -

)

TALKED WITH: Andrew Watson

REPRESENTING: Performance Papers Company, Inc.

SUBJECT: pH Incursion

COMMENTS: Must have been "momentary" - not for a long duration but did most likely exceed (he did not doubt our records/monitoring) They will continue to monitor and we will contact if a problem arise.

ROUTE TO: File: Performance Papers.

SIGNATURE: [illegible]

Performance Papers, Inc.
2030 Portage Street • P.O. Box 2528 • Kalamazoo, Michigan 49003 • (616) 345-7131

R. Richard Eaton PE/CPE, C.A.M.
Vice President
Engineering & Mill Services

March 3, 1989

RECEIVED MARCH 6 1989

Department of Public Utilities
Water Reclamation
1415 N. Harrison
Kalamazoo, MI 49007-2565

Attn: Bruce E. Merchant
Industrial Services Supervisor

Dear Bruce:

Administrative Orders for Industrial Discharges to the
Kalamazoo Water Reclamation Plant

We have reviewed the subject orders. At this time we are not aware of reasons why we would not be in compliance, and would not remain in compliance. If issues arise pertaining to our discharge, you will be notified as specified in the orders.

By means of this letter, as requested, we are certifying that we do not use pentachlorophenolic or trichlorophenolic based biocides.

If you have questions, please contact us.

Sincerely,

R. Richard Eaton

/deo
cc: M. Gallenberger
R. Mirkin
S. Oakleaf
M. Smith
J. Roth
A. Watson

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 2-24-89

TIME: 2:43 PM

[X] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION -)

TALKED WITH: R. RICHARD EATON

REPRESENTING: PERFORMANCE PAPERS

SUBJECT: A.O.

COMMENTS: LOCAL LIMITS COMPLIANCE - LOW!
PENTACHLOROPHENOLIC-BASED BIOCIDE - DON'T HAVE!

WILL BE SENDING INFO. NEXT WEEK

ROUTE TO: FILE - PERFORMANCE PAPERS (ALLIED

SIGNATURE: Bruce E. Merchant

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

Certified Mail #P 430 809 584

February 6, 1989

Performance Papers, Incorporated
2030 Portage Street
Kalamazoo, Michigan 49001
ATTN: Richard Eaton

Dear Mr. Eaton:

In response to state and federal requirements governing the City of Kalamazoo's Industrial Pretreatment Program (IPP), final Administrative Orders are being issued for all significant industrial users (SIUs) of the City of Kalamazoo Water Reclamation Plant (KWRP). Administrative Orders are the main control mechanism used by the City to monitor and regulate discharges into the sanitary sewer system. Compliance with all aspects of the Administrative Order is required for all significant industrial users in order to continue to receive wastewater service.

Several key items need to be mentioned regarding the format and content of these Administrative Orders.

1. The first three (3) pages of the Administrative Order deal with general discharge and reporting requirements for all significant industrial users. These items and conditions must be review closely by the industrial user to ensure that the appropriate procedures are followed as needed to maintain compliance with the Administrative Order.

2. Several specific attachments are part of each Administrative Order issued to industrial users and must also be reviewed carefully.

   A. Attachment A details the specific discharge limits for each individual industrial user. Specific local discharge limitations and/or federal categorical pretreatment standards will apply to such discharges and will be outlined and included in this attachment.

   B. Attachment B is lists any site-specific requirments that will be needed to ensure compliance with all applicable standards by the industrial user. A "Compliance Schedule" may be included that must be met completely by the listed Final Compliance Date in order to maintain wastewater service. If this section is labeled "Reserved" (that is, not filled in) for a given industrial user, continued compliance will be monitored with any future requirements detailed in a reissued Administrative Order or Compliance Order.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Phone:	616-345-7131
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

Discharge Standards:

Specific limits on pollutants discharged to the sanitary sewer are presented in **Attachment A.**

Compliance Schedule:

Areas of non-compliance must be resolved on an approved timetable. These items (if any) are included in **Attachment B.**

Monitoring and Reporting:

User shall install and maintain necessary monitoring equipment. User shall perform any required waste stream sampling and analyses. Self-monitoring reports may also be required. Specifics for each of these items are given in **Attachment C.**

Notification of Process Changes: Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes that may substantially affect wastewater flow or quality. Process changes are defined as major plant expansions or modifications, which result in the discharge of new pollutants or the introduction of higher quantities of existing pollutants. All process changes that could significantly increase flow or significantly lower wastewater quality must be approved by the Department of Public Utilities prior to implementation.

Notification of Slug Discharges: Immediate notification must be given to the Department of Public Utilities of any spills, slug loads or upsets in pretreatment processes that affect wastewater discharge to the sanitary sewer. You must monitor your processes and activities to assure prompt detection of any problems. The telephone number to call is 385-8157, day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within three (3) working days following the event. The reporting address is the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007.

Monitoring Authority:

User shall allow access by authorized Utilities Department staff members 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is reason to believe a discharge or violation is occurring, for inspecting all operations and records, copying records, and observing and sampling wastewater discharges.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to **Attachment C** for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

POLLUTANT		DAILY MAXIMUM CONCENTRATION LIMIT MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Mercury	(Hg)	0.250

II. Process-specific Discharge Limitations:

These limitations apply to all regulated process discharge(s) within the facility. Please refer to **Attachment C** for specific "end-of-process" sample location(s).

Pretreatment standards for Pulp, Paper, and Paperboard Category, Non-integrated Fine Papers, existing sources (40CFR Part 430.186):

User shall provide certification that pentachlorophenolic- or trichlorophenolic-based biocides are not used. If these biocides are used, daily maximum discharge concentration limits will be applied. Application of the discharge limits would require the submission of detailed production and operation data.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "C": MONITORING REQUIREMENTS

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Sample Location:

Metering station on north side of Bryant Mill clarifier.

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 2-3-89

TIME: 1245/AM

[X] - TELEPHONE CONVERSATION

[ ] - MEETING: LOCATION - _____)

TALKED WITH: JAN ORTON

REPRESENTING: CITY WATER

SUBJECT: 470 REED - PERFORMANCE PAPERS, INC.
10,000 M3 → 35,000 M3 / month

COMMENTS:
Allied gave "official notice to water dept re: name change. Jan questioned "water / no sewer" @ above acct. I explained Clarifier situation.

ROUTE TO: FILE - Performance Papers (Allied Paper)

SIGNATURE: _____

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 2/1/89

TIME: 2/1/89

[✓] TELEPHONE CONVERSATION

[ ] MEETING - LOCATION:

TALKED WITH: Richard Eaton

REPRESENTING: Performance Papers (Allied Paper)

SUBJECT: Administrative Order

COMMENTS: He has received Bruce Merchant's "most recent glorious epistle." Requests that we ~~issue~~ issue an amendment to change the name from Allied Paper to Performance Papers, Incorporated.

ROUTE TO: B. Merchant

Allied File - change name to Performance Papers.

SIGNATURE: Kent Mollinger

THE CITY OF

Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

Certified Mail # P 430 809 401

January 31, 1989

ALLIED PAPER CO.
2030 PORTAGE ST.
KALAMAZOO, MI 49001
Attn: RICHARD EATON

Dear Mr. Eaton:

In response to state and federal requirements governing the City of Kalamazoo's Industrial Pretreatment Program (IPP), final Administrative Orders are being issued for all significant industrial users (SIUs) of the City of Kalamazoo Water Reclamation Plant (KWRP). Administrative Orders are the main control mechanism used by the City to monitor and regulate discharges into the sanitary sewer system. Compliance with all aspects of the Administrative Order is required for all significant industrial users in order to continue to receive wastewater service.

Several key items need to be mentioned regarding the format and content of these Administrative Orders:

1. The first three (3) pages of the Administrative Order deal with general discharge and reporting requirements for all significant industrial users. These items and conditions must be reviewed closely by the industrial user to ensure that the appropriate procedures are followed as needed to maintain compliance with the Administrative Order.

2. Several specific attachments are part of each Administrative Order issued to industrial users and must also be reviewed carefully.

   A. **Attachment A** details the specific discharge limits for each individual industrial user. Specific local discharge limitations and/or federal categorical pretreatment standards will apply to such discharges and will be outlined and included in this attachment. All local discharge limitations are in effect as of January 31, 1989. Final compliance with these limitations must be achieved no later than December 31, 1989.

   B. **Attachment B** lists any site-specific requirements that will be needed to ensure compliance with all applicable standards by the industrial user. A "Compliance Schedule" may be included that must be met completely by the listed Final Compliance Date in order to maintain wastewater service. If this section is

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

User Name:	ALLIED PAPER CO.
Address:	2030 PORTAGE ST.
	KALAMAZOO, MI 49001
Phone:	616-345-7131
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

Discharge Standards:

Specific limits on pollutants discharged to the sanitary sewer are presented in **Attachment A**.

Compliance Schedule:

Areas of non-compliance must be resolved on an approved timetable. These items (if any) are included in **Attachment B**.

Monitoring and Reporting:

User shall install and maintain necessary monitoring equipment. User shall perform any required waste stream sampling and analyses. Self-monitoring reports may also be required. Specifics for each of these items are given in **Attachment C**.

Notification of Process Changes: Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes that may substantially affect wastewater flow or quality. Process changes are defined as major plant expansions or modifications, which result in the discharge of new pollutants or the introduction of higher quantities of existing pollutants. All process changes that could significantly increase flow or significantly lower wastewater quality must be approved by the Department of Public Utilities prior to implementation.

Notification of Slug Discharges: Immediate notification must be given to the Department of Public Utilities of any spills, slug loads or upsets in pretreatment processes that affect wastewater discharge to the sanitary sewer. You must monitor your processes and activities to assure prompt detection of any problems. The telephone number to call is 385-8157, day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within three (3) working days following the event. The reporting address is the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007.

Monitoring Authority:

User shall allow access by authorized Utilities Department staff members 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is reason to believe a discharge or violation is occurring, for inspecting all operations and records, copying records, and observing and sampling wastewater discharges.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:	ALLIED PAPER CO.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to **Attachment C** for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

POLLUTANT		DAILY MAXIMUM CONCENTRATION LIMIT MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Mercury	(Hg)	0.250

II. Process-specific Discharge Limitations:

These limitations apply to all regulated process discharge(s) within the facility. Please refer to **Attachment C** for specific "end-of-process" sample location(s).

Pretreatment standards for Pulp, Paper, and Paperboard Category, Non-integrated Fine Papers, existing sources (40CFR Part 430.186):

User shall provide certification that pentachlorophenolic- or trichlorophenolic-based biocides are not used. If these biocides are used, daily maximum discharge concentration limits will be applied. Application of the discharge limits would require the submission of detailed production and operation data.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "C": MONITORING REQUIREMENTS

User Name:	ALLIED PAPER CO.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Sample Location:

Metering station on north side of Bryant Mill clarifier.

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

October 18, 1988

Mr. Richard Eaton
Allied Paper Co.
2030 Portage Street
Kalamazoo, MI 49001

Dear Mr. Eaton:

Enclosed are the results of wastewater sampling conducted at your facility on August 1-5, 1988. The sampling was performed by personnel from the Kalamazoo Water Reclamation Plant as part of the Industrial Surveillance and Pretreatment programs.

Please contact me at 385-8157 if you have any questions regarding this information.

Sincerely,

Kent Mottinger

Kent Mottinger
Industrial Waste Sampling Officer

j

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

August 24, 1988

Mr. Richard Eaton
Allied Paper Company
2030 Portage Street
Kalamazoo, MI 49003

Dear Mr. Eaton:

Attached are the quarterly wastewater sampling results for your facility thus far in 1988. The sampling was performed by personnel from the Kalamazoo Water Reclamation Plant as part of the Industrial Surveillance and Pretreatment programs.

We are in the process of generating discharge limits for non-domestic users of the wastewater collection system. In order to point out parameters that may be of a concern when the discharge limits are finally issued, relatively high values in your sampling results have been marked with highlighter.

Please note that any marked values for pH or Grease and Oils (G&O) indicate violation of the existing Sewer Use Ordinance. Grease and Oils in excess of 100 mg/l are prohibited. Wastewater with a pH lower than 6.2 or higher than 9.8 are also prohibited.

Contact me at 385-8157 if you have any questions.

Sincerely,

Kent Mottinger

Kent Mottinger,
Industrial Waste Sampling Officer

j

ALLI

Composite Sampling Results

DATE OFF:	2/9/88	2/10/88	2/11/88	2/12/88	
TIME OFF:	9:45 AM	9:35 AM	9:25 AM	9:30 AM	
ALIQUOTS (#)					AVERAGE
BOD mg/l	288	325	338	275	306
COD mg/l	340	483	182	306	320
TSS mg/l	24	112	36	32	51
NH3-N mg/l	3.10	3.66	3.08	2.25	3.02
Total P mg/l	<.10	0.30	<.10	0.28	0.14
Cu ug/l	47	44	36	32	40.
Zn ug/l	52	48	52	45	49
Ag ug/l	<0.25	<0.25	<0.25	<0.25	<0.25

Grab Sampling Results

D A T E :	2/9/88	2/10/88	2/11/88	2/12/88	
T I M E :	9:45 AM	9:35 AM	9:25 AM	9:30 AM	
pH	6.9	6.6	6.6	6.7	
G & O mg/l					

aboratories, Inc

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 2-24-88
Date Received : 2-10-88
P.O. Number :
Laboratory Code: 880234-1

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 04088, 2-9-88

SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	1.8	Methylene Chloride	<1
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	1.7	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	48
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	<1	m-and/or p-Xylene	2.0
Ethylbenzene	<1	o-Xylene	3.2
Toluene	<1		

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

Laboratories, Inc.

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 2-24-88
Date Received : 2-10-88
P.O. Number :
Laboratory Code: 880234-2

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 04188, 2-10-88

SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	<1
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	37
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

ALLIED PAPI COMPANY - QUARTERLY

Composite Sampling Results

DATE OFF:	6/1/88	6/2/88	6/3/88		
TIME OFF:	9:00 AM	8:45 AM	8:45 AM		
ALIQUOTS (#)					AVERAGE
BOD mg/l	235	310	192		240
COD mg/l	199	267	377		281
TSS mg/l	28	42	38		36
NH3-N mg/l	1.23	1.14	1.39		1.25
Cu ug/l	63	32	21		39
Zn ug/l	35	20	123		60
Ag ug/l	<0.50	<0.50	<0.50		<0.50

Grab Sampling Results

D A T E :	6/1/88	6/2/88	6/3/88		
T I M E :	9:00 AM	8:45 AM	8:45 AM		
pH	7.6	6.9	6.4		
G & O mg/l					

* See attached DNR Scans 1 and 2 results from KAR Labs

KAR Laboratories, Inc

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 6-23-88
Date Received : 6- 3-88
P.O. Number : 41926
Laboratory Code: 880976

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 15488, 6-2-88

SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	3.6	Methylene Chloride	<10
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	2.7
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

TO: File

FROM: Bruce F. Merchant, Industrial Services Supervisor BFM

DATE: August 10, 1988

SUBJECT: Allied Paper Company By-Pass Valve

This memo is written to clarify the various correspondence in the file regarding the by-pass valve that Allied Paper Company has to the City of Kalamazoo sanitary sewer. This by-pass of metering and facilities is available but it is chained and locked at all times except for a once per year cleaning of their Bryant Street clarifier (see letter dated July 6, 1988 for a summary of 1988 annual July 4 cleaning). The by-pass valve has been tagged by Public Utilities personnel and the integrity of that tag is checked on a daily basis when flow monitoring data and wastewater samples are retrieved from the sample station located on the north side of the Bryant Street clarifier.

c: R. Amundson
file

OFFICE OF THE CITY ATTORNEY

July 26, 1988

Allied Paper Company
Division of SCM
2030 Portage Road
Kalamazoo, MI 49001

Attention: Mr. Richard Eaton, Manager, Utilities, Maintenance and Engineering

Dear Mr. Eaton:

On July 22, 1988, the City of Kalamazoo Water Reclamation Plant received a request to review your industrial/commercial service file. You had requested that the information which you provided be kept confidential. Under the terms of the Michigan Freedom of Information Act, this confidentiality can be maintained only if you can establish that its maintenance is necessary for the protection of trade secrets. In order for the City to make that determination, you must review the City's industrial/commercial file on your company, specifically describe which trade secrets would be compromised by release of the information, demonstrate that the result would substantially undermine your company's competitive position, and show that you have taken reasonable steps to maintain the secrecy involved. The justification must be in writing and must provide specific details with regard to each of these issues.

Please contact either Dan Starkey or Rohel Amundson of the Water Reclamation Plant at 385-8157 to set up an appointment to review the Water Reclamation Plant's file on your company. This review must be completed and the information provided to the City by Monday, August 8, 1988, so that the City has adequate time to decide the matter. Absent adequate justification for withholding the information or a court order restraining the City from releasing it, the information would be released on August 12, 1988.

Sincerely,

Lawrence W. Newmeyer
Assistant City Attorney

LWN/cc

cc: Dan Starkey, Rohel Amundson, Water Reclamation Plant

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

P. O. BOX 2528 KALAMAZOO, MICHIGAN 49003

R. RICHARD EATON PE/CPE
MANAGER, UTILITIES, MAINTENANCE
& ENGINEERING

(616) 345-7131

July 6, 1988

Department of Public Utilities
1415 N. Harrison
Kalamazoo, MI 49007-2565

Attn: Mr. Bruce E. Merchant
Industrial Service Supervisor

Dear Bruce:

July 4, 1988 Shutdown

We are confirming our telephone call early this week informing you of a 48+ hour total mill shut down. During this period there will be a complete curtailment of our normal flows to the city sewer. There will be minimal intermittent flows during the down period when sump pumps are automatically activated. The solid materials from the clarifier and other tanks will be dumped into our decanting lagoons.

We anticipate a flow to the city sewer should commence afternoon on Wednesday, July 6, 1988. Thank you for assistance in this matter.

Sincerely,

R. Richard Eaton

/deo
cc: J. Roth
M. Smith

January 18, 1988

Allied Paper

Telephoned Martin Smith who then returned my call. He said that he had someone clean out the solids last week. I told him ~~they~~ there were still solids filling the wier box. He questioned as to where they could be coming from. I told him that either the solids had not been cleaned out or they had filled back in from the clarifier outer ring. Mr. Smith said he would check into it.

3-10-88 ALLIED PAPER CO. 2:20 pm

Look into

PORTAGE CREEK - FROM WEST OF CREEK ON ALCOTT.

OIL SPILL - "PETROLEUM" ODOR ON CREEK

COUPLE DAYS AGO.

PER R. EATON (HAVE KENT CHECK INTO)

Notice of PENDING Lawsuit - Aug. '86 (PCB 1st NOTIFICATION FROM STATE ON JUNE '84)

Meeting w/ Mayor & City Mgr - Aug. '87 - Background info.

2 DEC '87 - LAWSUIT FILED BY STATE

LIMNO-TECH (ENVIRONMENTAL CONSULTANTS)

PROPOSED REMEDIAL ACTION PLAN

- based on containment

MILL A - ON EDGE OF BRYANT mill POND

DEINK PROCESS USED. 1970 - SHUT DOWN.

STREAM DAMMED OFF IN 1894 - used for power generation initially

several areas ACTUALLY

CEASED PRIOR TO WWII

Level of gate at Alcott St. Dam - verbal agreement w/ City on this (FLOOD CONTROL BASICALLY)

Kent Mottinger
1-6-87

Allied Paper

December 28, 1987

Telephoned John Roth and notified him that the weir box at the sampling station is full of solids. He said that he would take care of it.

January 6, 1988

Telephoned Andrew Watson and explained the solids situation in the sampling station. The solids still have not been ~~tempor~~ removed from the weir box and they are clogging the lines. Also, told him that the metering equipment and sampler could not function in those low temperatures. Explained that we need heat in the station ASAP. Andrew protested by claiming that the old probe system did not require heat to function. I explained that in addition to the transponder, neither the chart recorder nor the sampler could function properly below freezing. (In fact the sample itself would freeze). He said that he would talk to his maintenance people.

I recommend that we request in writing that Allied install adequate heat to maintain temperatures above freezing and that they keep the weir box free of solids.

CONFIRMATION OF VERBAL CORRESPONDENCE

Date: 12-1-87
Time: 1 35/PM

Route to: FILE
Talked with: MARTIN SMITH
Representing: ALLIED PAPER CO.

(X) Telephone Conversation
(I Called HIM)
( ) Meeting
Location:

SUBJECT: Phoned regarding flow charts from last weekend and today (12-1-87 for 11-30-87). He will look into getting them to us!

Signed, [illegible]

CONFIRMATION OF VERBAL CORRESPONDENCE

Date: 11-10-87
Time: 11 02/AM

Route to: FILE
Talked with: MARTIN SMITH
Representing: ALLIED PAPER COMPANY

(X) Telephone Conversation
(He Called me)
( ) Meeting
Location:

SUBJECT: 11 02 AM: MARTIN SMITH called and wondered what the Industrial Services Technicians were doing at the "other" Clarifier. (by Cork Street) (or the Effluent weir to Portage Creek) Allied personnel located them and found them "checking out" this system. Mr. Smith reiterated his understanding of our earlier agreement in September and asked that I check into them being there and why they were there. I agreed to check into it and call back but I reiterated our position regarding the need to inspect their pretreatment facilities

~11 40 AM: I talked w/ Tim M. & Don H. regarding the "incident". Tim was under the impression that he was to be checking the "other" clarifier routinely. Kent M. & I said no - this was to be checked only with their approval & assistance. Tim and Don both stated how rude & suspiciously they were treated by the Allied employee who confronted them

11 55/AM - I called Mr. Smith back & apologized for the mix up and stated we had instructed our employees not to be over there. He then discussed the "problem" of our employees "attitude" - I quickly reiterated what Tim & Don had told be about how they were treated & the Allied employee "attitude" - I believe Mr. Smith is now satisfied.

Signed. Bruce E Merkt

CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: July 6, 1988

TIME: 8:20 AM

(X) TELEPHONE CONVERSATION

[ ] MEETING - LOCATION:

TALKED WITH: R. RICHARD EATON

REPRESENTING: ALLIED PAPER COMPANY

SUBJECT: weekend shut-down of their Bryant St. Clarifier - no proper notification, etc....

COMMENTS: His fault not to notify us re: this shut-down. He will ~~shut down~~. Write a letter to confirm our conversation and to detail the problem. Apologized for not letting us know sooner.

ROUTE TO:

SIGNATURE: Bruce Elfenbein

CONFIRMATION OF VERBAL CORRESPONDENCE

Date: 9-21-87
Time: 10:20 Am

Route to: FILE
Talked with: R. Richard EATON
Representing: ALLIED PAPER Co.

(X) Telephone Conversation
(He Called Me)
( ) Meeting
Location:

SUBJECT: INFORMED ME THAT FOR THE LAST 20 HRS - The "TURBIDITY" in their system was higher resulting in "white water" being present in the clarifier, etc. Mr. Eaton indicated that the reason for this was a bad pump and that corrections were being made to have it back on line by afternoon (9-21-87 PM). [We noted that sample was much higher in turbidity when brought in at noon on 9-21-87 - "whiter" also]

Signed, Bruce S. Merchant

10 20 AM 9-21-01

LAST
20 HRS

"Turbidity" in
System higher
"white water"
~~Let them know~~
will be back on
line later this afternoon
(Pump bad.)

[illegible]

CONFIRMATION OF VERBAL CORRESPONDENCE

Date: SEPTEMBER 8, 1987

Time: 9:35 AM

Route to: KENT & FILE

Talked with: R EATON, M SMITH, J Roth

Representing: ALLIED PAPER CO

( ) Telephone Conversation

(_____ Called _____)

(X) Meeting

Location: ALLIED PAPER CO. - RICHARD EATONS OFFICE

SUBJECT:

Meeting started with Mr Eaton regaling us for not "signing in" up front & walking around their property without passes. We had refuted M Smith to K Mottinger earlier by phone not to bother signing in. Mr Eaton set entire tone of meeting by his initial comments. We discussed the events of last Friday (9-4-87) and reach Allied's side of the story regarding "doing maintenance for them and were asked to respond to "what were we doing?". Kent stated that Tim Meulenberg had over stepped his bounds and that we would no longer be "exploring" or wandering around checking "creeks and rivers". I stated our right to inspect their entire pretreatment system per the ordinance and that we consider the leaking pump as part of that system. We then established "procedures" to follow regarding collecting samples, checking the clarifier and obtaining a monthly pass for City employees. This we agreed to but also said that no guarentees can be made regarding arrival times or which employees will be doing the route on any given day. We also discussed five (5) items of concern we had re (A) the valve on their sampler being closed on weekends; (B) General safety conditions around the auto sampler, (C) information regarding their by-pass (when how much, why) (D) Requested Vol results on their private well (not available as yet) and, (E) The need for us to change the charts & keep on file. We will provide Allied w/ copies 24 hours later. We will continue to discuss these various issues

Signed, Bruce E Merchant

(We are to contact J Roth in problem s/concern in the future (2) the station is to be locked - no matter what (3) 8:30 AM → 9:00 AM Arrival time)

9 30 AM TUES. 9/8/87 meeting w/ [illegible]

- ✓ Sampler valve - closed on weekends ROUTINELY
- ✓ General safety conditions around sample station
- ✓ Information (on lack thereof) re: bypass
- ✓ VOC Results on private well. - Status/available
- ✓ leave charts - we have our own supply & we want to keep them. We will make copies & leave the next day.

City of Kalamazoo

INTER-OFFICE MEMO

To: Oakley Herrick, Ron Sefcik, Kent Mottinger

From: James Dunn, Instrument Technician

Date: August 18, 1987

Subject: Bryant Clarifier/Allied Paper Company

This memo is regarding work order number 15301. I had to make changes on the newly installed flow monitoring equipment for Allied Paper Company. After measuring zero twice, once from the bottom then once from the top of the crest of the weir, I changed the transmitter from 37.63 inches to 37.44 inches. The previous setting was creating a minute overbilling condition.

The span setting was not changed, but it should be noted that the actual crest height (span) is 12.125 inches. The transmitter is only capable of four decimal places, so 12.13 inches is the program setting. This results in a slight favor to the company.

Next, the full scale flow rate was changed from 16 m^3/m to 16.07 m^3/m. The chart's full scale will be 16 m^3/m, but the total gallons divided by the number of gallons in a cubic meter is 16.0749 m^3/m which I rounded low to give a slight favor to the company. A setting of 16 m^3/m is underbilling the customer.

Lastly, the pulse rate had to be changed to keep from overbilling the customer. It was changed from 965 to 964 counts per hour, merely by rounding down instead of up. Once again, this change was made to favor the company and avoid an overbilling situation.

d

c File

Through
8/10/87

ALLIED 1986

04-02-86 - No flow through sampler; reason unknown; two (2) liters of sample.

04-03-86 - No flow through sampler due to power outage; four (4) liters of sample.

10-01-86 - Inlet valve closed; no sample.

10-07-86 - Inlet valve partially clogged; some sample.

10-08-86 - Inlet valve partially clogged; no sample.

11-30-86 - Valve to sampler closed; no sample.

12-01-86 - Inlet valve closed; no sample.

12-03-86 - Inlet valve to sampler plugged; two (2) liters of sample.

12-07-86 - Inlet valve to sampler closed; ¼ liter of sample.

12-08-86 - Solids build up in inlet valve; little sample.

ALLIED 1987

04-19-87 - Valve to sampler closed; ¼ liter of sampler.

05-03-87 - Valve to sampler and valve upstairs closed; no sample.

06-29-87 - Inlet to sampler plugged; no sample.

07-05-87 - Inlet valve closed; no sample.

07-15-87 - Inlet valve closed; no sample.

08-02-87 - Inlet valve plugged; one (1) liter of sample.

08-03-87 - Inlet valve plugged; no sample.

08-09-87 - Inlet valve closed; no sample.

* First week of June 1986 Sigma sampler was moved to present location; at which time an ISCO 2100 Series Sampler was setup due to Sigma sampler being trashed out from flow surges.

** Sigma sampler was back in operation on August 17, 1986.

To: Jean
From: Kent
Date: 5/4/87
Sub: Allied Paper - No Samples

No samples were collected at Allied Paper for 5/1, 5/2, 5/3/87 (Fri, Sat, Sun). This morning John + Teresa found that the inlet line to the sampler had been shut off at both valves.

According to the totalizer, the flows for those three days were

5/1	2286	m^3
5/2	2594	m^3
5/3	2847	m^3

These flows are about normal.

I phoned Andrew Watson around 11:30. He told me that there was no flow over the weekend due to plant shut down. He said that the man who shut down the clarifier probably just mistakenly also shut the sampler valves.

The Techs report some kind of construction taking place near the Cork Street Clarifier.

Invoice

1396

Oudbier Instrument Co.

815 Alles Dr., Byron Center, Michigan 49315
616-878-3454

BILL TO: City of Kalamazoo
ADDRESS: Water Reclamation Plant
CITY: 1415 N. Harrison, Kalamazoo Mi. 49007

JOB SITE: Allied Paper
ADDRESS:
CITY:

CUSTOMER P.O.	SERIAL #	MODEL #	DATE WORK PERFORMED
39626		51-11020B 5005 3100	5-21-87

WORK DESCRIPTION

Check installation and calibration of new F+P ultrasonic flowmeter at Allied Paper
Range 0-12.125" H_2O Capacitor wire = 0-16 m³/m
Totalizer set to 1 count = 1 m³
Check zero & span - OK
Installation - good

QTY.	PART NUMBER	AMOUNT
TOTAL PARTS	X	

LABOR — REG. HRS. 4 AT 40 /HR.		$160 00
O.T. HRS. ____ AT ____ /HR.		
PER DIEM		
EXPENSES (TOLLS, ROOM, MEALS, ETC.)		
MILEAGE 120 AT .30		36 00
OTHER		
LABOR & EXPENSE SUBTOTAL	V	196 00
PARTS	X	
LABOR & EXPENSE PLUS PARTS	V+X	196 00
TAX (exemption # Municipal)		
FINAL AMOUNT — NET 30 DAYS		196 00

SERVICE REPRESENTATIVE	DATE	CUSTOMER SIGNATURE
[signature]	5-21-87	[signature]

1 1/2% INTEREST PER MONTH ON UNPAID BALANCE

CITY OF KALAMAZOO, MICHIGAN

May 22, 1987

Mr. Andrew Watson, Senior Project Leader
Allied Paper Corporation
2030 Portage
Kalamazoo, MI 49001

Dear Mr. Watson:

Attached is a copy of the invoice certifying that the new flow metering equipment has been installed and is functioning properly. Effective May 22, 1987, we will begin using this new totalizer for surveillance and surcharge billing operations.

It will be necessary for us to have immediate access to the daily flow chart. Therefore, we will be picking up the chart in the morning, make a photocopy, and place the copy back in the station for your people on the following morning.

Your cooperation and assistance in providing flow estimates during the time period there was no metering equipment at the station has been greatly appreciated.

Please call me if you have any questions.

Sincerely,

Kent Mottinger

Kent Mottinger
Industrial Waste Sampling Officer

j

c File

4-27-87

Allied Paper Co. @
Metering station
Observed the installation of new "Slime Control" equipment and one barrel of unknown chemical on site.
Tubing from equipment leads to center of clarifier. Piping for chemical addition not fully connected yet.

Cal

City of Kalamazoo

INTER-OFFICE**MEMO**

To: Dan Starkey, General Superintendent

From: Jean Eldred, Industrial Services Supervisor JEldred

Date: April 6, 1987

Subject: Allied Paper Company Monitoring Station

The new Fisher & Porter flow meter for the Allied monitoring station is in the process of being purchased. When installed, this meter will provide us with more reliable data. However, I wish to point out that there are still problems with the flow metering set-up. The weir itself is not of the proper configuration; the end contractions are too short. It has been estimated that this causes a low flow reading of approximately two (2) percent per day. It is not feasiable to correct the weir problems in its current location.

Please consider this memo as a reminder to include funding in the 1988 budget to construct a suitable monitoring station for this location.

y

c R. Amundson
B. Minsley
File✓

Allied Paper Co.

BOD	5-1 to 9/30	389 #/day
	10-1 to 4/30	836 #/day
TSS	5-1 to 9/30	500 #/day
	10-1 to 4/30	543 #/day-mo. ave.
		836 #/day daily max.

NPDES permit info
from J Vollmer
3/24/86

Per : No. MI 0000779

MICHIGAN WATER RESOURCES COMMISSION

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; the "Act"), and the Michigan Water Resources Commission Act, as amended, (Act 245, Public Acts of 1929, as amended, the "Michigan Act"),

Allied Paper, Inc.
Bryant Mill

ia authorized to discharge from a facility located at

2030 Portage Street
Kalamazoo, Michigan 49001

to receiving water named Portage Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

This permit takes effect immediately upon the date of issuance. Any person who feels aggrieved by this permit may file a sworn petition with the Commission, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Commission may reject any petition filed more than 60 days after issuance as being untimely. Upon granting of a contested case to the applicant, the Commission shall review the permit to determine which contested terms shall be stayed until the Commission takes its final action. All other conditions of the permit remain in full effect. If the contested condition is a modification of a previous permit condition and the Commission determines the contested condition shall be stayed, then such previous condition remains in effect until the Commission takes final action. During the course of any administrative proceeding brought by a person other than the applicant, the conditions of this permit will remain in effect, unless the Commission determines otherwise.

This permit and the authorization to discharge shall expire at midnight March 31, 1989 In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Michigan Water Resources Commission no later than 180 days prior to the date of expiration.

This permit is based on an application dated April 24, 1979 and updated June 9, 1980, December 18, 1981, June 14, 1982, June 29, 1982, November 15, 1982 and November 30, 1983, and shall supersede any and all Orders of Determination, Stipulation, Final Orders of Determination, or NPDES Permits previously adopted by the Michigan Water Resources Commission.

Issued this 17th day of January 1985, by the Michigan Water Resources Commission, superseding NPDES Permit No. MI 0000779 issued December 20, 1974 with an expiration date of September 30, 1979.

Paul D. Zugger
Executive Secretary

Reissue

D.O. STAFF

2. Final Effluent Limitations

During the period beginning October 1, 1985 , and lasting until expiration of this permit, the permittee is authorized to discharge up to three million five hundred thousand (3,500,000) gallons per day of treated process wastewater from outfall 002 to the Portage Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Monthly Average	Daily Maximum	Other Limitations Monthly Average	Daily Maximum	Monitoring Requirements Measurement Frequency	Sample Type
• Flow, M^3/Day (MGD)					Daily	Report total daily flow
• Settleable Solids (mg/l)					Weekly	Grab
•Biochemical Oxygen Demand (BOD_5)						
(May 1-September 30)		177(389)			Daily	24-Hr. Composite
(October-April 30)		380(836)			Daily	24-Hr. Composite
•Total Suspended Solids (TSS)						
(May 1-September 30)		230(500)			Daily	24-Hr. Composite
(Oct. 1-April 30)	247(543)	380(836)			Daily	24-Hr. Composite
•Outfall Observation*					Dialy	Visual

*Any unusual characteristics of the discharge which would not be expected from the above authorized discharge (e.g., turbidity, discoloration, oil film, suspended matter, etc.) shall be reported immediately to the District Office of the Surface Water Quality Division followed with a written report within 5 days detailing the findings of the investigation and the steps taken to correct the condition.

a. The pH shall not be less than 5.0 nor greater than 9.0. The pH shall be monitored as follows: daily; grab.

b. The discharge shall not cause excessive foam in the receiving waters. The discharge shall be essentially free of floating and settleable solids.

c. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

d. Samples and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to Portage Creek.

e. In the event the permittee shall require the discharge of wastewater treatment additives at the wastewater treatment plant in addition to any previously approved by the Chief of the Surface Water Quality Division, the permittee shall notify the Division Chief. Written approval from the Chief of the Surface Water Quality Division to discharge such additives at specified levels shall be obtained prior to usage by the permittee. The permit will be modified in accordance with the requirements of Part II, Section B-4 if a constituent of the additives requires limiting.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME ALLIED PAPER

ADDRESS 2030 PORTAGE
KALAMAZOO, MICHIGAN 49001

FACILITY

LOCATION

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DISCHARGE-MONITORING REPORT
DAILY MONITORING

PERMIT NUMBER: M10000779

DISCHARGE NUMBER: 002

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	87	1	1	TO	87	1	31

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBLITY OF FINE AND IMPRISONMENT SEE 18 U S C § 1001 AND 33 U S C § 1319 (Penalties under these statutes may include fines up to $10 000 and or maximum imprisonment of between 6 months and 5 years)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
R. RICHARD EATON
MGR UTILITIES MAINT & E
TYPED OR PRINTED

DAY	PAR #	50050	85001	00546	85002	00400				
	PARA MATER	FLOW	BOD-5	SOLIDS-SETTLEABLE	SOLIDS-SUSPENDED	pH				
	LIMIT		836		836	5-9				
	UNITS	MGD	lbs/day	mg/l	lbs/day					
01		0.281	526		39	7.0				
02		0.474	781		130	6.8				
03		0.273	235		15	7.4				
04		0.043	38		20	7.5				
05		0.100	90		06	7.4				
06		0.063	36		10	7.3				
07		0.197	162	0.6	19	7.2				
08		0.227	225		14	7.3				
09		0.231	200		06	7.3				
10		0.318	268		11	7.3				
11		0.292	265		37	7.2				
12		0.344	241		25	7.2				
13		0.061	39		04	7.3				
14		0.026	20	0.2	02	7.2				
15		0.064	55		06	7.0				
16		0.040	37		03	7.0				
17		0.018	28		02	6.8				
18		0.000	00		00	6.7				
19		0.046	91		03	6.8				
20		0.052	131		04	6.8				
21		0.040	74	0.1	02	7.1				
22		0.056	114		07	7.1				
23		0.102	148		11	6.9				
24		0.038	40		03	7.0				
25		0.059	47		02	7.5				
26		0.240	130		12	7.3				
27		0.103	96		13	7.2				
28		0.111	81	0.9	09	7.3				
29		0.111	185		09	6.9				
30		0.106	152		06	7.0				
31		0.050	80		02	7.0				
	TOTAL	4.166	4615	1.8	432					
	AVERAGE	0.134	149	0.45	14					

133

13

PR4612 1 12/86

...ESS (Include Facility ...different)

NA... ALLIED PAPER INC

ADDRESS Box 2528
KALAMAZOO, MICHIGAN
49003

FACILITY

LOCATION

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DISCHARGE MONITORING REPORT
DAILY MONITORING

PERMIT NUMBER	DISCHARGE NUMBER
M10000779	002

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	87	02	01	TO	87	02	28

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBLITY OF FINE AND IMPRISONMENT SEE 18 U S C § 1001 AND 33 U S C § 1319 *(Penalties under these statutes may include fines up to $10 000 and or maximum imprisonment of between 6 months and 5 years)*

Martin L. Smith
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
MARTIN L Smith / Mgr. Wastie
TYPED OR PRINTED

	PAR #	50050	85001	00546	85002	00400				
	PARA-MATER	FLOW	BOD_5	SOLIDS SETTLEABLE	SOLIDS SUSPENDED	pH				
	LIMIT		836		836	5-9				
DAY	UNITS	MGD	lbs/day	mg/l	lbs/day					
		0.026	47		02	7.0				
02		0.301	541		22	6.7				
03		0.146	282		25	6.9				
04		0.085	163	2.1	06	7.0				
05		0.004	06		01	6.8				
06		0.067	111		05	6.9				
07		0.119	262		16	7.0				
08		0.288	557		11	7.0				
09		0.187	366		16	7.1				
10		0.202	393		24	6.7				
11		0.222	544	1.3	20	6.9				
12		0.036	90		03	6.7				
13		0.018	42		01	6.5				
14		0.006	15		01	6.8				
15		0.000	00		00	7.0				
16		0.002	48		01	6.9				
17		0.036	88		04	6.6				
18		0.031	68	1.2	03	6.5				
		0.317	738		38	6.4				
20		0.188	334		16	6.7				
21		0.568	633		32	6.7				
22		0.552	429		31	7.1				
23		0.107	85		03	7.1				
24		0.038	53		18	7.0				
25		0.456	645	0.9	38	6.9				
26		0.337	453		26	7.2				
27		0.356	387		24	7.1				
28		0.352	325		20	7.2				
29										
30										
31										
	TOTAL	5.047	7705	5.5	407					
	AVERAGE	0.180	275	1.4	15					

133 96

PR4612 1 12/86

...T BE USED.)

...NT AREA CODE NU... DATE

STATE OF MICHIGAN TRANSMITTAL

TO:

1 Jean Eldred

2 Kal. WWTP

3

4

FOR ACTION AS INDICATED

☐ SIGNATURE	☐ REPLY–MY SIGNATURE	☐ NOTE AND FORWARD
☐ APPROVAL	☐ REPLY–COPY TO ME	☐ NOTE AND FILE
☐ ACTION	☐ PLEASE SUMMARIZE	☐ NOTE AND RETURN
☐ COMMENTS	☐ PLEASE INVESTIGATE	☐ PLEASE PHONE ME
☐ INFORMATION	☒ FORWARDED PER REQUEST	☐ PLEASE SEE ME

REMARKS:

See you 6:15 Wed.

FROM	DATE
Linda Kowalewski	3-23-87

FORM 10575

1

3-19-87

File

TO: Oakley + Staff

FROM: Jean Eldred

RE: Allied Paper flow metering station

I spoke with Andrew Watson at Allied today. They are considering raising the weir at the metering station. I told him they will need to contact us before making any changes as they will necessitate recalibration of flow meter. He said they will contact us.

CITY OF KALAMAZOO, MICHIGAN

March 18, 1987

Mr. R. Richard Eaton, Manager
Utilities, Maintenance and Engineering
Allied Paper Company
2030 Portage Street
Kalamazoo, MI 49001

Dear Mr. Eaton:

Wastewater treatment is an important function in maintaining a high standard of living without degrading our natural environment. In recent years, local governments in the Kalamazoo Metropolitan area have worked together in constructing sewers and treatment facilities, which are now working to collect and treat wastewater in an environmentally sound manner.

As a condition of receiving Federal and State grants to assist in financing wastewater construction projects, there are Federal Regulations which must be observed. In particular, these regulations require that an Industrial Pretreatment Program (IPP) must be implemented. IPP goals are designed to prohibit wastes from entering the public sewer system, which might upset treatment plant processes, contaminate sludge or pass through the treatment plant untreated to the Kalamazoo River. These goals must be met in order to meet Federal Regulations, and also to protect our natural environment from possible pollutional effects of industrial wastewater discharges into the public sewer system.

As part of the approved IPP, the City of Kalamazoo is required to issue Administrative Orders to all significant users of the wastewater treatment system. A significant user is one which has a high strength waste, a high flow, a potential toxic discharge or is regulated by Federal categorical pretreatment standards. A typical Administrative Order will contain applicable specific discharge limits, reporting requirements, and possible pretreatment construction and compliance schedules. The Administrative Order will be used in conjunction with the sewer use ordinance and applicable Local, State or Federal statutes.

DEPARTMENT OF PUBLIC UTILITIES, Water Reclamation Plant
1415 N. Harrison, Kalamazoo, Michigan 49007 2565 (616) 385 8157

Final Administrative Orders will be issued to all significant users, on a priority basis, as soon as practicable, with a target date that all orders will be issued by the middle of 1988. In the meantime, we are issuing Interim Administrative Orders. Enclosed with this correspondence is the Interim Administrative Order for your company or business. If you have any questions about any of this information, please feel free to contact us.

Sincerely,

Jean Eldred

Jean Eldred
Industrial Services Supervisor

y

encl

c File ✓

Interim Administrative Order

User Name: Allied Paper Company
User Address: 2030 Portage Street, Kalamazoo, MI 49001
Date of Issue: 3-18-87

1. Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes, including but not limited to, flow and quality. All process changes that significantly affect wastewater flow and quality, must be approved by the Department of Public Utilites, prior to implementation.

2. Immediate notification must be given to the Department of Public Utilities of any spills, upsets in pretreatment processes, or slug loads that affect wastewater discharge to the public sewer. You must monitor your processes and activities daily to insure prompt detection of any problems. The phone number to call is 385-8157. This phone will be answered any time of the day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted, to the Industrial Servcies Supervisor, within three (3) working days following the event.

3. This Order does not relieve you of obligations under any Local, State, or Federal statutes, rules, or regulations, including but not limited to, categorical pre-treatment standards. Additional local requirements pertaining to wastewater discharge can be found in the City of Kalamazoo Code of ordinances, Chapter 28, and, if user is not located in the City of Kalamazoo, also in the applicable ordinance of the municipality in which the user is located.

4. You will be liable for all damages, which your discharge does to publicly owned wastewater collection or treatment systems, if that damage is caused by a violation of this Order or any applicable statute, ordinance, regulation or rule.

5. This Order is subject to change at the sole discretion of the City of Kalamazoo.

6. The City of Kalamazoo may act through its Department of Public Utilities or such other department or persons as the City in its sole discretion deems appropriate.

Orlin K. Loen

Orlin K. Loen, P.E.
Director of Public Utilities

y

To: Jean Eldred

From: F. Szopo Frank

Re: Weir configuration, Allied Paper Co.

Mar. 3, 1987

Jean:

The following is my theory and assumptions regarding the above and the flow readings at the Allied Paper Co. meter station:

1) Allied high flows equal a weir level (H) of 11.25", therefore I assume maximum H of 12".

2) Depth below weir of 24.875" is correct, however end contractions of 11.625" are too small and should be minimum of 24" long.

3) End contractions slow down the flow going over the weir. With the end contractions smaller than required, it can be assumed that the flow at the Allied weir is faster than the flow at a correctly configured weir. Therefore flow rates at the Allied weir are actually larger then flow rates recorded which are based on standard end contraction weir tables.

4) A guesstimate as to the amount of error in the flow readings at the weir is in the 1.5 to 2.0 percent range, that is, our readings are 1.5 to 2.0 percent low. This is derived by:

a) Comparison of flow value for a weir with proper end contractions with the flow value for a suppressed weir, L=3' and H=12":

$$Q(\text{contracted}) = 3.33(L-0.2H)H^{1.5} = 9.324 \text{ cfs}$$

$$Q(\text{suppressed}) = 3.33LH^{1.5} = 9.99 \text{ cfs}$$

Difference in % = (9.99-9.324)/9.324 = 6.18%

b) Our error at max. flow would be less than this since we do have end contractions. Since our end contractions are half the length required, it can be assumed that 3% error at max. flow would be in the ballpark.

c) Low flow error might be in the .5 to 1 percent range, giving an average daily flow error in the 1.5 to 2.0 percent range.

5) The existing weir cannot be modified easily. In order to get the proper end contractions the entire weir box would have to be widened by 2 feet. The length of the weir cannot be shortened (in order to increase the length of the end contractions) because H would get so high that the clarifier would overflow its sidewalls.

These figures are just approximate, if you need hard numbers it will require more time and study.

Hope this information is what you were looking for, please call me if you need better documentation.

copy: D. Starkey

City of Kalamazoo

INTER-OFFICE MEMO

To: Sheryl L. Sculley, City Manager

From: Orlin K. Loen, Director of Public Utilities

Date: March 17, 1987

Subject: Replacement Flow Meter for Allied Paper Company

RECOMMENDED CITY MANAGER ACTION

City Manager approval is requested for a sole source purchase of a wastewater flow meter from Fischer and Porter of Lathrup Village, Michigan, in the amount of $4,810.00. The meter will replace an existing unit, which measures wastewater for billing purposes at Allied Paper Company.

BACKGROUND

The existing flow meter at Allied Paper Company is no longer reliable. When the meter is not operational, the Utility must rely on flow estimates provided by Allied Paper in order to calculate their monthly bill. The Utility is requesting authorization to purchase a new Fischer and Porter flow meter for $4,810 to replace the existing meter. Repairs for the existing meter would cost $1400 in parts alone, and even then, an excessive amount of maintenance and calibration would be required to keep the old meter operational.

Fischer and Porter is being recommended as a sole source , since the Utility currently has similar equipment at six other metering stations. This allows for inter-changeability of parts and minimizes spare parts inventory needs.

SUMMARY

Approval of this request will eliminate the present problem of downtime, caused by the existing meter. This purchase was not included in the 1987 Budget. Funding is to be provided by transfering $4,810 from 590-901-752 (Sewer Construction Operating Supplies) to 590-901-982 (Sewer Construction Machinery and Equipment).

nb

att

c B.Minsley

REQUEST FOR PURCHASE ORDER [x] VOUCHER [ ]

Transaction Type: FQ70

Transaction Date: 3 / 12 / 87

Vendor Number:

Encumbrance No.

Batch Number:

Payment Date: / /

DEPARTMENT Public Utilities

Req.238

DIVISION Water Reclamation Plant

REQ. DATE 3/12/87

VENDOR Fischer & Porter NO.

P.O. NO.

ADDRESS 28820 Southfield Suite 221

SHIP TO (610 CODE)

CITY Lathrup Village STATE Mi ZIP 48076

TERMS OF PAYMENT

DELIVERY REQUIRED BY

ITEM	FUND	ORG	ACCT.	PROGRAM	ACTIVITY	AMOUNT
6	590	901	~~[illegible]~~ 982.00	205 ~~[illegible]~~	~~[illegible]~~	4810.00

CONFIRMING DATE

GOODS RECEIVED: DATE

FOB [ ] (1) DESTINATION [ ] (2) SHIPPING POINT

[x] (3) DELIVERED [ ] (4) PICK-UP

ITEM NO.	PART NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
1.		#821A002U73 - 51-1102DB 12" chart Recorder 24 hr. (1) pen 120 V	1	E	1320.00	1320.00
2.		#821A009U92 - 50US 3113AB Open Channel Flow Meter	1	E	1960.00	1960.00
3.		#624B339U04-Digital display & counter for Item #2	1	E	160.00	160.00
4.		#805H028U04 - pipe mount w/o megaphone	1	E	N/C.	N/C.
5.		#686B522U02 - Main PC board	1	E	1160.00	1160.00
6.		#624B339U03 - Digital display assembly	1	E	210.00	210.00
		Ship to Attn: R Williams			TOTAL	4810.00

COMMENTS: PLACE ANY PERTINENT INFORMATION HERE YOU DO NOT WISH TYPED ON P.O.

Allied Paper Metering Station

J Eldred/ R Williams

Attachments

AWARDABILITY:

I hereby certify that the articles above specified are necessary for the use of this department and are to be used solely for the benefit of the City

APPROVALS: O.K. - JEldred

Rolla Williams Date 3-12-87

Requisitioner Ext. #

Orlin K. Loeb RAB Date 3-17-87

Department Head

Date

Finance Director

FOR PURCHASING USE ONLY

CHECKED BY:

FORWARD TO:

ENTRY OK:

ON HOLD FOR:

AWARDABILITY:

Form 512 6-14-85

QUOTATION

FISCHER & PORTER

Please refer to our quotation no. on all orders or correspondence.

TO: CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC WORKS
1415 N. HARRISON KALAMAZOO MI 49007

ATTENTION: ROLLA WILLIAMS

REFERENCE: KALAMAZOO WWTP

QUOTATION NO. 1166 DET FP

DATE 2-24-87

We are pleased to submit our quotation on the following items:

QUANTITY	MODEL/PART NO. AND DESCRIPTION	PRICE EACH NET
1	821A002473 51-1102 DB 12" CHART	
	RECORDER 24 HR REV, 1 PEN, 120VAC	$1,320
1	821A009492 50US3113 AB OPEN	
	CHANNEL FLOW METER WITH DIGITAL	$1,960
	DISPLAY 0-100% AND COUNTER 624B339404	$160.00
1	805H028404 PIPE MOUNT W/OUT MEGAPHONE BASE	
1	686B522402 MAIN PC BOARD	$1160.00
1	624B339403 DIGITAL DISPLAY ASSEMBLY	$210.00
	TOTAL	$4,810.00
	OPTION	
1	821A009491 50US3112AB OPEN CHANNEL	
	FLOW METER WITH ANALOG DISPLAY	$1,880
1	50US300 TRANSPONDER	500.00
	AS PER FRED 3-3-87	

DELIVERY 2-4 WEEKS (ARO OR AFTER APPROVAL WHICHEVER APPLIES). WHEN SPECIFYING FLOWMETERS, REMEMBER TO INCLUDE NAME OF FLUID TO BE METERED, SPECIFIC GRAVITY, VISCOSITY, TEMPERATURE, MIN. & MAX. FLOWRATE, REQUIRED ACCURACY, AND WHETHER OR NOT FLUID IS CORROSIVE.

SEND ORDER TO: FRED PLUSKAT
SALES REPRESENTATIVE
ADDRESS 28820 SOUTHFIELD SUITE 221
LATHRUP VILLAGE MI 48076

This quotation is subject to the general terms and conditions as outlined on the reverse.

FISCHER & PORTER COMPANY WARMINSTER, PA. U.S.A. 18974
(215) 674-6000 | CABLE FISHPORT | TELEX: 845 215

70-45A

City of Kalamazoo

INTER-OFFICE MEMO

To: Orlin K. Loen, Director of Public Utilities

From: Jean Eldred, Industrial Services Supervisor JEldred

Date: February 26, 1987

Subject: Purchase of Flow Metering Equipment for Allied Monitoring Station

I am requesting the purchase of new flow metering equipment for the Allied Paper Company monitoring station. Although this purchase was not planned in the 1987 budget, it is necessary to purchase a new flow meter as soon as possible. The existing flow meter became inoperative in November of 1986 and continues to be extremely unreliable. (Please note that the major problems began after the 1987 budgeting process was completed.) While the meter is down, we are using estimated flows for billing purposes. These estimated flows are being provided by Allied Paper Company. Our instrument repair personnel have encountered difficulty in obtaining the necessary repair parts, since the flow meter is quite old. It is estimated that to bring the meter back into operation would require approximately $1400 in repair parts. Even then, it will require an excessive amount of maintenance and calibration to keep it operational.

Because this meter provides data of a critical nature; data which is used to generate revenue, I am requesting that obtaining a new meter be treated as an emergency, and every effort made to expedite its purchase.

I am also requesting that the purchase be a sole source purchase. We currently have Fisher and Porter metering equipment in our other monitoring stations. Although the meter we will be purchasing is a newer model than the other Fisher and Porter meters, it will still be partially compatible with the existing equipment, making it possible to keep a smaller repair parts inventory than if we were to purchase a different brand of meter. (It is not possible to purchase the same model as is used in the other stations, because it is no longer manufactured.) Fisher and Porter equipment has been used in existing monitoring stations for several years, and has been proven to be reliable and accurate. The flow metering equipment selected must also be compatible with the wastewater sampling equipment which is currently installed at the Allied monitoring station. The Fisher and Porter equipment is compatible.

Funding for this purchase is available within the 1987 capital budget.

Please contact me if you require any additional information.

c Amundson
Herrick
Starkey
file

City of Kalamazoo

INTER-OFFICE MEMO

To: Bruce Minsley, Deputy Director

From: Jean Eldred, Industrial Services Supervisor JEldred

Date: February 5, 1987

Subject: Allied Paper Company By-pass

On February 2, 1987, Utilities Staff (Amundson, Szopo, Ward, Eldred) met with an engineer at Allied Paper Company. The engineer took us on a tour of the Bryant Clarifier. During this tour, the Allied engineer pointed out the location of the by-pass which allows Allied to discharge untreated (and unmetered and unsampled) paper mill waste to the sanitary sewer. A "tee" connection with a valve exists in the influent line to the clarifier. The valve has a lock and chain on it, and a sign that says to contact John Roth, Dick Eaton or Andrew Watson before opening the valve. I do not believe this set-up is acceptable. It would be more appropriate to require Allied to install a device, such as a limit switch with a timer, which would detect if the valve had been opened.

Another option would be for Allied to allow the Utilities department to lock the valve. If Allied needed to by-pass, they could obtain the key from us. We should develop a fee for use of the by-pass; the fee should be high enough to strongly discourage it's use. Of course, if Allied prefers, they could physically disconnect (remove) the by-pass. Any devices installed should be to our specifications and at Allied's expense.

I would appreciate it if you would discuss this with Dick Eaton at Allied, and come up with a mutually (somewhat) agreeable decision. Please contact me if you require additional information.

y

c Szopo
Starkey
Amundson
File ✓

P.S. There may be more to come. We have discovered that the weir which is used to measure Allied's flow is not built according to standard. Our engineers are investigating to see if the flow measurement is affected.

Jean

City of Kalamazoo
1-23-87
sht. 1 of 3

Metering Station: Allied Paper Co. F. Szopo

Earthwork:

Excav. Bldg 1800 cu yds @ 1^{54}		2772 -
Excav. Pipe Trenches 2000 cu. yds @ 1^{54}		3080 -
Add Endloader work 2 wks @ 1140		2280 -
B'fill & Compact Bldg.: 1000 cu.yds @ 4^{96}		4960 -
426 " @ 2 -		852 -
B'fill & Compact Pipe Trench: 100 cu yds @ 4^{96}		496 -
1900 " @ 2 -		3800 -
Dewatering 1 Mo @ $600 /mo		600 -
Gravel Drive		2000 -

Mechanical: (Outside)

Install 64 LF - 12" RCP - Cl. IV @ 11^{38}/ft		728 -
Specials	Add	300 -
5 yds Cl. B. Conc. @ 100 - /cu yd		500 -

Structure:

Concrete, Reinf., forms, placing:

Bottom Slab: 22.5 cu.yds @ 126^{34}	2843 -
Walls: 106 yds @ 257^{47}	26,656 -
Int. & top Slabs: 50 yds @ 161^{54}	8,077 -
Stairs: 15 LF @ 15^{67}	235 -
Finishing: Slabs - 570 sq.ft. @ 52¢/s.f.	296 -
Walls - Ties, break & patch 2400 s.f. @ 44¢/s.f	1056 -
Cl. B. Fill Conc.: 20 yds @ 100 - /cu.yd	2000 -

Misc. Elect. & Plmb. rough in below grade	$ 11.00
Bilco Hatch 4'x4' + install	1323
MH sections – Lab + mat'l:	
(2) @ 4'-0" x 359 lb	720
(1) @ 2'-0" x 240 lb	241

Masonry Structure above grade:

Masonry walls – 540 sq.ft (3537 brick)	2615
540 sq ft (6" block)	1475
Lintles	50
Bond Beam. 60 LF	417
Precast Roof panels 153 sq.ft	536
Roof Insul. 2.5" thick	181
Wall Insul. 1" thick	308
Roofing – 4ply built up. or rubber fabric	250
Parapet Wall	250
Parapet Wall Cap & fascia. 60 LF	215
Pre-hung Stl. Door, Insul. & Weatherstrip	227
Frame	83
(2) 18"x18" mol – mat'l + labor	500
Heating Ventilating: Ventilating Equip. + labor	850
Heating	350
Electrical – mat'l + labor.	3750
Plumbing – Incl. labor for Sampler, flow meter misc. roof drains, small pipe & va.	2250

City of Hall
1-23-87
Sht. 3 of 3

E. Szopo

Major Equipment: Mat'l only

Sampler	2600
Flow Meter	5000
Flume.	2000
Fencing - 160 LF 8" chain link galv.	2408
(1) 10' wide gate.	116
Total.	93,346

Kalamazoo Pricing:

Total X Kal. Index

93,346 X .91 = $84,945

8000 cap repl

CITY OF KALAMAZOO, MICHIGAN

December 12, 1986

Mr. Andrew Watson
Allied Paper Incorporated
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Mr. Watson:

Standpipe lengths and the calibration of the Robertshaw level transmitter is as follows:

The short standpipe is 15.125" below top of grating. This represents zero head in inches, zero percent signal and zero flow in gallons per minute. The tall standpipe is 3" below top of grating. This represents 12.125" of head, one hundred (100) percent signal and 4247 gallons per minute of flow. Besides the times ten (10) multiplier, an additional multiplier of 1.41567 will be used until such time that the totalizer can be changed.

Sincerely,

James F. Dunn

James F. Dunn
Instrument Technician

y

c Oakley Herrick
Jean Eldred
Kent Mottinger
File

City of Kalamazoo

INTER-OFFICE MEMO

To: Jean Eldred

From: Kent Mottinger KM

Date: December 29, 1986

Subject: Allied Paper Monitoring Station Status

The monitoring station at Allied Paper continues to be unreliable and maintenance intensive. Since its relocation by Allied personnel during the first week in June, 1986, there have been numerous samples and daily flow measurements lost due to a variety of problems at the station.

Beginning with June 1, 1986 through the date of this memo there have been 58 days with no flow measurement and 25 days with no sample out of 212 total days. In terms of percentage, there is no flow data 27% of the time and no samples 12% of the time. The missed samples would have been many more but portable Isco samplers were used to collect time - based samples from June 13 - August 17, 1986, and September 8 - September 27, 1986. For billing purposes, we have relied on calculated averages or data supplied by Allied to fill in the missing days for flows and sample results.

At this time, the flow metering system has not worked properly since December 9, 1986, possibly longer. I have discussed this with Oak Herrick and Jim Dunn. They are purchasing a new probe and transmitter. Delivery is anticipated in another 2 - 4 weeks. They also plan to re-wire part of the system. Monthly calibration checks will be performed when the new transmitter and probe have been installed. It is uncertain that this will at last "solve" the flow metering problem.

dd

c: File

City of Kalamazoo

INTER-OFFICE MEMO

To: Richard G. Simms, General Superintendent

From: Jean Eldred, Industrial Services Supervisor JEldred

Date: January 8, 1987

Subject: WRP Operational Problems due to Paper Mill Waste

During the weekend of January 3, 1987, operations personnel observed paper mill sludge coming into the municipal primary side of the plant. On January 6, I contacted Mr. R. Richard (Dick) Eaton of the Allied Paper Company in an attempt to find out if Allied had discharged untreated wastewater. He said that they had not discharged untreated waste. He also told me that Allied had been shut down for five days during the Holidays, and that they started up again on December 29,1986. I asked him to check with his staff to see if there had been a problem of which he was unaware; he said he would. I have not heard from him since.

Since Allied is the only paper mill which discharges to the municipal side of the WRP, I know of no one else to question in the matter.

c file

City of Kalamazoo

INTER-OFFICE MEMO

To: Andrew Watson, Allied Paper Incorporated

From: James Dunn, Instrument Technician

Date: December 9, 1986

Subject: Allied Paper Incorporated
Wier on Bryant Clarifier

Stand pipe lengths and the calibration of the Robert Shaw level transmitter is as follows:

The short stand pipe is 15.125" below top of grating. This represents zero head in inches, zero percent signal and zero flow in gallons per minute. The tall stand pipe is 3" below top of grating. This represents 12.125" of head, one hundred (100) percent signal and 4247 gallons per minute of flow. Besides the times ten multiplier, an additional multiplier of 1.41567 will be used until such time that the totalizer can be changed.

y

c Oakley Herrick
Jean Eldred
Kent Mottinger
File

Allied Paper

INCHES BELOW GRATING TOP	INCHES OF HEAD	% SIGNAL	GPM	MGD
15.125	.000	.0	0	.000
14.875	.250	.3	13	.019
14.625	.500	.9	38	.055
14.375	.750	1.6	70	.100
14.125	1.000	2.5	107	.154
13.875	1.250	3.5	150	.216
13.625	1.500	4.6	197	.283
13.375	1.750	5.8	247	.356
13.125	2.000	7.1	302	.434
12.875	2.250	8.4	359	.518
12.625	2.500	9.8	420	.605
12.375	2.750	11.4	484	.698
12.125	3.000	12.9	551	.794
11.875	3.250	14.6	621	.894
11.625	3.500	16.3	693	.997
11.375	3.750	18.0	767	1.104
11.125	4.000	19.8	844	1.215
10.875	4.250	21.7	923	1.329
10.625	4.500	23.6	1004	1.446
10.375	4.750	25.6	1087	1.566
10.125	5.000	27.6	1172	1.688
9.875	5.250	29.7	1260	1.814
9.625	5.500	31.7	1349	1.942
9.375	5.750	33.9	1440	2.073
9.125	6.000	36.0	1532	2.207
8.875	6.250	38.3	1627	2.343
8.625	6.500	40.5	1723	2.481
8.375	6.750	42.8	1821	2.622
8.125	7.000	45.2	1920	2.765
7.875	7.250	47.6	2021	2.910
7.625	7.500	49.9	2123	3.057
7.375	7.750	52.4	2227	3.207
7.125	8.000	54.9	2332	3.358
6.875	8.250	57.4	2439	3.512
6.625	8.500	59.9	2547	3.667
6.375	8.750	62.5	2656	3.825
6.125	9.000	65.1	2767	3.984
5.875	9.250	67.8	2879	4.145
5.625	9.500	70.5	2992	4.308
5.375	9.750	73.1	3106	4.473
5.125	10.000	75.8	3221	4.639
4.875	10.250	78.6	3338	4.807
4.625	10.500	81.4	3456	4.976
4.375	10.750	84.2	3575	5.148
4.125	11.000	87.0	3695	5.320
3.875	11.250	89.8	3816	5.495
3.625	11.500	92.7	3938	5.670
3.375	11.750	95.6	4061	5.848
3.125	12.000	98.5	4185	6.026
3.000	12.125	100.0	4247	6.115

12-4-86

Andrew Watson, Allied Papers called

average BOD 430 untreated waste
TSS 1260

these are averages from the months of may, June and July 1986 (they no longer run these tests on untreated)

use the above averages for calculating the BOD + TSS on the untreated flow for November 24, 1986

Jean Eldred
12-4-86

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

November 27, 1986

Mr. Kent Mottinger
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, Michigan 49007

Dear Kent,

My estimates of our flow to the city sewer system are:

November	15	0.425	MGD
	16	0.490	
	17	0.377	
	18	0.429	
	19	0.149	
	20	0.578	
	21	0.197	
	22	0.203	
	23	0.626	
	24	2.128	(1.904 treated + 0.224 untreated)

I have been talking to James Dunn about the flow calibriation, and he is putting in a new transmitter.

Sincerely,

Andrew Watson

Andrew Watson
Senior Project Leader

Allied Paper

Nov 26, 1986 Kurt Mottinger

I phoned Andrew Watson on 11/26/86 to discuss the sample results and flows for 11/24/86. This was the day the clarifier was being bypassed and untreated wastes was being discharged to the City sanitary sewer. Allied provided a sample of the discharge which our lab analyzed as having 26 mg/l suspended solids. Watson says the sample was collected from the center ring of the clarifier as the wastewater was being discharged to the City.

Watson is sending us a letter describing what went on 11/24/86 and a flow estimate. He is also including flow estimates for 11/15/86 through 11/25/86. Additional flow estimates will be available. Our meter is still down at present.

11-24-86

11:00 A.M.

Andrew Watson called to report that untreated waste is being sent to us. They are experiencing a leak between the two clarifiers, had to shut the Monarch clarifier down. remaining clarifier could not handle total flow w/o overflowing. so Allied is sending some untreated waste (enough to keep clarifier from overflowing) work should be done by 2:00 p.m we will be notified if otherwise. A sample will be collected and put in sampler for us. Also Andrew Watson will get flow estimate.

Sources for above info: Dick Eaton, Andrew Watson

Stan Eldred
11-24-86

2:00 p.m.

Dick Eaton called said they stopped by -passing at 1:15 p.m.

Eldred 11-24-86

CITY OF KALAMAZOO, MICHIGAN

September 10, 1986

Mr. Richard Eaton
Manager - Utilities Maintenance
and Engineering
Allied Paper Corporation
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Mr. Eaton:

The attached letter dated August 5, 1986, advised that wastewater pretreatment removal credits would be eliminated from the monthly bill due to continued problems with the monitoring station. Following modifications to the monitoring station performed by Allied personnel, we were able to install the new circuit board in the automatic sampler. The sampler was put back into operation on August 17, 1986. Since that time there has been no further problem with the sampler overflowing.

During the time period from June 10, 1986 through August 17, 1986, samples were collected through the use of a portable ISCO sampler. There were 18 days for which there were no samples collected due to wastewater overflows and ongoing work in the station. Figures calculated from historical data were used for these days. The data collected does seem to be in harmony with that collected before and after the time period we were without the monitoring station permanent sampler.

Since we do have usable data and desire to maintain our cordial relationship, we have elected not to withhold removal credits from your wastewater bills. We ask only that in the future we be included in planning any modifications to the monitoring station before they occur.

DEPARTMENT OF PUBLIC UTILITIES, Water Reclamation Plant
1415 N. Harrison, Kalamazoo, Michigan 49007 (616) 385-8157

Regarding another matter, we would like to keep the flow charts from the station. I have already discussed this with Andrew Watson. It would be acceptable for Allied personnel to make a copy and put the chart back in the station for us to pick up on our daily route. We would like the charts beginning with September 1, 1986.

Sincerely,

Kent Mottinger

Kent Mottinger,
Industrial Waste Sampling Officer

j

c Andrew Watson
Jean Eldred
File

CITY OF KALAMAZOO, MICHIGAN

August 5, 1986

Mr. R. Richard Eaton
Manager - Utilities Maintenance
and Engineering
Allied Paper Corporation
2030 Portage Street
Kalamazoo, MI 49001

Dear Mr. Eaton:

The automatic sampler at Allied Paper's new wastewater monitoring station continues to be out of service. The attached letter from Kent Mottinger to you dated July 21, 1986 addressed the problems with the plumbing and ventilation in the station. Since that time the ventilation problem as apparently been alleviated by the installation of an exhaust fan. The sampler's plumbing remains inadequate and causes the sampler to overflow. On Wednesday, July 30, 1986, Kent telephoned Allied Paper to caution them that unless the sampler problem was taken care of by Monday, August 4, 1986, the wastewater pretreatment removal credits would be cancelled. On Monday, August 4, 1986, our daily route crew observed that the sampler plumbing still has not been corrected.

Effective August 1, 1986 and continuing until such time as the automatic sampler is in operation and proven adequate, the Allied Paper Corporation will not receive wastewater pretreatment removal credits on the monthly bill.

Please feel free to call me at 385-8157 if you have any questions.

Sincerely,

Jean Eldred

Jean Eldred
Industrial Services Supervisor

copy: Andrew Watson
Richard Simms
Oakley Herrick
File

CITY OF KALAMAZOO, MICHIGAN

July 21, 1986

Mr. Dick Eaton, Plant Engineer
Allied Paper Corporation
2030 Portage Street
Kalamazoo, MI 49001

Dear Mr. Eaton:

As discussed during our telephone conversation on July 2, 1986, there continue to be problems with the wastewater monitoring station at Allied's discharge to the City sanitary sewer. At the writing of this letter, the automatic sampler has not been plumbed in and no ventilation has been installed in the building. We have not yet replaced the sampler's circuit board which was destroyed when the sampler was moved to its new location. The new circuit board will be installed when plumbing and ventilation are adequate to prevent damage to the new board. There is also a growing concern on the part of our instrument technicians that the flow totalizer and chart system will also be damaged by the extremely hot, humid conditions in the building.

This situation has existed since June 10, 1986. Immediate action to remedy the situation would be greatly appreciated.

Sincerely,

Kent Mottinger

Kent Mottinger
Industrial Waste Sampling Officer

d

c Andrew Watson
Richard Simms
Oakley Herrick
File

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

March 18, 1986

Ms. Jean Eldred
KALAMAZOO WATER RECLAMATION PLANT
1415 Harrison
Kalamazoo, Michigan

Dear Jean,

Enclosed is the information on the Michigan WPCF workshop I mentioned.

Thanks for the figures for February's total BOD and TSS. The BOD number is in reasonable agreement with my data. The TSS numbers do not agree. The TSS number you gave me was 3504.2 Kg. My total TSS, to the City, for February was 1897 lbs. (860 Kg). I went to look at the sampler, and it is very dirty.

I think better housekeeping will bring our results into closer agreement again.

Sincerely,

A W Watson

A. W. Watson

/kmj

MICHIGAN WATER POLLUTION CONTROL ASSOCIATION

MEMBER
WATER POLLUTION
CONTROL FEDERATION

P.O. BOX 3258
GRAND RAPIDS, MI 49501

ASSOCIATION PUBLICATION
WASTEWATER WORKS NEWS

EXECUTIVE COMMITTEE:

JOHN M. BOHUNSKY
PRESIDENT
(517) 373-2730

JACK H. WAGNER
PRESIDENT-ELECT
(313) 476-6970

GORDON E. JONES
VICE-PRESIDENT
(616) 345-1158

THOMAS NEWHOF
PAST PRESIDENT
(616) 364-8491

FREDERICK T. EYER
SECRETARY-TREASURER
(616) 456-6231

FRED E. COWLES
ASSISTANT SECRETARY
(517) 373-8088

LAWRENCE L. DE LONG
STATE DIRECTOR
(616) 683-4700

CORTLAND V. OVERMYER
STATE DIRECTOR
(616) 966-3513

LEON VELDHUIS
STATE DIRECTOR
(616) 772-6931

JEANETTE M. BEST
P.W.O.D. REPRESENTATIVE
(517) 799-9425

JAMES W. HUBBELL
FEDERATION DIRECTOR
(313) 338-9241

DARYLE R. SMITH
FEDERATION DIRECTOR
(616) 456-3625

March 10, 1986

Dear Wastewater Administrator:

Our second Wastewater Administrators Workshop is scheduled for Thursday, March 27, 1986, at the Clarion Hotel in Lansing. Agenda and registration application are attached. Please respond by March 17, 1986. Due to accommodation commitments, only pre-registration will be accepted.

It is important to remember that this is a workshop, not a seminar, and the format is for two-way communication in a moderator controlled setting. Evaluate the agenda and come prepared to discuss your problems or ideas on the subjects. If you feel you have a unique problem or solution to a problem, come prepared to share it with the group. Bring material to pass if needed for clarity.

Bring extra personal business cards. They are very useful in requesting material from other attendees.

On the top half of the pre-registration form is the core committee membership list of individuals you may contact for further information.

Hope to see you on the 27th.

Sincerely,

Daryle R. Smith

Daryle R. Smith, Chairperson
Ad-Hoc Wastewater Administrators Committee

DRS/cy
C14

Attachments

WASTEWATER ADMINISTRATORS WORKSHOP

Date: March 27, 1986

Time: 9:00 a.m. - 4:30 p.m.

Location: Clarion Hotel, Lansing--formerly Long's (map on back)
6810 South Cedar
800 252-7466 (reservations, information)
517 694-8123 (for messages during workshop)

AGENDA

8:30 - 9:00 a.m.	Registration
9:00 - 9:15 a.m.	Welcome and Introduction - Daryle R. Smith
9:15 - 10:00 a.m.	Permit Limits Moderator: Dick Simms Total Residual Chlorine Metals Organics BODs, SS, NH_3, etc.
10:00 a.m.	Coffee
10:00 - 10:30 a.m.	Permit Limits (continued)
10:30 - 11:30 a.m.	Land Application of Sludge Moderator: Corky Overmyer
12:00 - 1:00 p.m.	Lunch - Guest Speaker: Paul D. Zugger, Executive Secretary, Water Resources Commission - Topic: DNR Programs Impacting N.P.D.E.S. Permit Holders
1:00 - 1:30 p.m.	Septage Disposal Requirements Moderator: Steve Young
1:30 - 2:00 p.m.	Industrial Pretreatment Program - Audit and Inspection Checklist by EPA Moderator: Lee Veldhuis
2:00 - 2:30 p.m.	Break
2:30 - 3:00 p.m.	Hazardous Material - Right To Know Moderator: Steve Young
3:00 - 3:30 p.m.	Storm Water Permit System Moderator: Daryle R. Smith
3:30 - 4:00 p.m.	Wrap-up, Group Feedback - Corky Overmyer Future issues, agenda, dates, locations, times

DRS:thr
C7

AD-HOC WASTEWATER ADMINISTRATORS COMMITTEE

Daryle Smith, Chairman
1300 Market Ave., S.W.
Grand Rapids, MI 49503
(616) 456-3628

Dick Simms
Wastewater Treatment Plant
1415 N. Harrison
Kalamazoo, MI 49007
(616) 385-8157

Cortland Overmyer
2000 W. River Road
Battle Creek, MI 49014
(616) 966-3513

Steve Young
c/o City Hall
P.O. Box 1647
Midland, MI 48640
(517) 496-3680

Lee Veldhuis
City of Zeeland, City Hall
21 S. Elm Street
Zeeland, MI 49464
(616) 722-6931

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
E R CAROLLO
MARLENE J FLUHARTY
STEPHEN F MONSMA
O STEWART MYERS
RAYMOND POUPORE
HARRY H WHITELEY

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

RONALD O SKOOG, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

June 11, 1985

Mr. Andrew Watson
Allied Paper Company
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Mr. Watson:

In my letter of June 4, 1985, I informed you of an apparent exceedance of the BOD limit during the 1984 survey. During your phone call on June 10, 1985, at 3:00 p.m., you brought to my attention an error in the BOD calculation. Please accept our apologies for this error. The correct number is 168 kg/day of BOD, not 200 kg/day as in the survey. This was within the permit limits at the time of the survey.

Sincerely,

SURFACE WATER QUALITY DIVISION

John Vollmer

John Vollmer
Water Quality Specialist
Plainwell District
616-685-9886

JV:ek

cc: NPDES file

cc: Dave
Dick E

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
E. R. CAROLLO
MARLENE J FLUHARTY
STEPHEN F. MONSMA
O STEWART MYERS
RAYMOND POUPORE
HARRY H WHITELEY

JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

RONALD O. SKOOG, Director

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

June 4, 1985

Mr. Andrew Watson
Allied Paper Company
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Mr. Watson:

Enclosed for your use is a copy of the Industrial Wastewater Survey which was performed at Allied Paper on September 18 and 19, 1984. The results are tabulated in Table 3, along with MOR results and your permit limits.

The analysis of the composite sample showed a BOD of 200 Kg/day. The permit which was in effect during the survey had a limit of 177 Kg/day as a daily maximum. What is presently being done to keep BOD within the daily maximum limit?

I will await your letter until July 8, 1985, before assuming that further action may be needed.

Sincerely,

SURFACE WATER QUALITY DIVISION

John Vollmer

John Vollmer
Water Quality Specialist
Plainwell District
616-685-9886

JV:ek

Enclosure

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

RECEIVED
MAR 18 1985
SWQD-Plainwell

Report of an
Industrial Wastewater Survey
Conducted at

ALLIED PAPER COMPANY
All Outfalls No. 390222
NPDES No. MI 0000779
Kalamazoo County
1608 Lake Street, Kalamazoo, MI
September 18 and 19, 1984

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Tuesday, September 18, 1984.

The results of this survey are compared to the numerical limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI 0000779. The survey loading for BOD was slightly greater than the daily maximum (Table 3).

The survey results are compared to the self-monitoring results reported in the company's Monthly Operating Report (Table 3).

A grab sample was split with the company for comparison of laboratory results. The comparison is presented in Table 4. The flow monitored during the survey period was about 20 M^3/day less than the company's monitored flow for the same period (Table 4).

The last survey performed at this facility was in October, 1982. The comparison of survey results is presented as Table 5.

Plant Process

The Allied Paper Corporation produces bible paper, light weight printing papers and other specialty papers at its Bryant Mill in Kalamazoo. The mill operates 5 fourdrinier paper machines and one off-machine coater. The normal production of the mill is approximately 220 tons of product per day. The mill employs about 390 people and operates 24 hours per day, 7 days per week. 260

The mill uses bleached kraft pulps manufactured at other locations. Both softwood and hardwood pulps are used. Clay, titanium dioxide and calcium carbonate are used as fillers. Very small amounts of direct dyes are used for tinting some grades of paper. Rosin and alum are used for sizing. On some grades of paper small amounts of melamine formaldehyde is used to produce wet strength. No bleaching is done in the normal process of making paper.

On the coater polymeric synthetic latices and/or natural water soluble polymers are used as binders. Styrene-butadiene, vinyl acetate and acrylics are all used from time to time. Of the five paper machines one has flotation type save-alls and four have disc-type save-alls. The company plans to convert the remaining flotation type save-all to a disc type save-all in the future.

Final product is shipped from the plant on rolls. No finishing of the paper is done at the plant.

The location of the plant is shown in Figure 1.

Water Supply & Wastewater Treatment

Process water used at the Bryant Mill is obtained from the Portage Creek and is chorinated and passed through sand filters prior to use. Potable water for the mill is obtained from the City of Kalamazoo. Domestic wastes are discharged to the city's sanitary sewer system. Boiler water is obtained from company owned wells and is softened by a hot lime-soda process prior to use.

Process wastewaters from excess white water, coating machine water, filter backwash, softener backwash and boiler blowdown are discharged to the 100 foot diameter Bryant clarifier. A copolymer is added to improve settling. A portion of the Bryant clarifier effluent is discharged to the City of Kalamazoo sanitary sewer system via outfall 390004 (001). The remainder of the Bryant clarifier effluent is discharged to the 90 foot diameter Monarch clarifier. Flow is automatically apportioned by a computerized system utilizing a total organic carbon analyzer. Some of the MOnarch clarifier effluent may be recycled for process water. Recycled water is treated with alum. The remaining Monarch clarifier effluent is discharged to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is sprayed onto drying lagoons on plant property adjacent to the clarifiers.

Survey Procedure

The flow and samples were obtained as follows:

Sample Description	Flow Measurement	Sampling Methods
390006 (002); sample collected at discharge from Monarch clarifier	Staff installed water level recorder on company installed 36" rectangular weir	Automatic air activated composite sampler, 4 aliquot grab composite & individual grabs
390004 (001); sample collected at Bryant clarifier to city	---	Individual grabs
Downstream; sample collected at the Bryant Street bridge	---	Individual grab
Intake; sample collected upstream at the pumphouse	---	Individual grab

A water level recorder provides a continuous account of the liquid level or head above the crest of a weir or through a flume. A head versus time graph is obtained for the duration of the survey period. The total volume of wastewater over the weir or through the flume 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 or through the flume.

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.

In 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 and 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.

Allied Paper Company

Table 1 Analyses of composite samples.

Outfall	390006 (002)	
Survey Period From	9-18-84 @ 1430	
To	9-19-84 @ 1430	
Computed flow rate[1] (M^3/day)	800	
	mg/l	kg/day
Suspended solisd	28	20
Dissolved solids	820	700
Settleable solids	4	3
BOD_5	→ 210 LH	200
$CBOD_5$	ACC	---
TOC	85	70
Nitrite	0.02	0.02
Ortho phosphate	0.07	0.06
Nitrite & nitrate nitrogen-N	0.03 DM	0.02
Ammonia nitrogen-N	0.13 DM	0.1
Kjeldahl nitrogen-N	4.8	4
Total phosphorus-P	0.12	0.1
Conductivity (umhos/cm)	1095	---
Chloride	95.6	80
Alkalinity (as $CaCO_3$)	123	100
Turbidity (FTU)	98	80
	ug/l	kg/day
Phenols	21	0.02
Total aluminum (Al)	<1000	---
Total cadmium (Cd)	<0.2	---
Total chromium (Cr)	<50	---
Total copper (Cu)	<20	---
Total iron (Fe)	<100	---
Total nickel (Ni)	<50	---
Total lead (Pb)	<50	---
Total titanium (Ti)	<1000	---
Total zinc (Zn)	<50	---
SCAN 3 - Chlorinated Hydrocarbons	<0.05	---
SCAN 4 - Polychlorinated Biphenyl Aroclors	<0.1	---
SCAN 4 - Organochlorine Pesticdes	<0.05	---
SCAN 8 - Phenols	<5.3	---

1 - Flow rates used in the computation of kg/day.
To obtain MGD multiply M^3/day by 0.0002642.
To obtain lbs/day multiply kg/day by 2.205.

Allied Paper Company

Table 2 Analyses of grab samples.

Date	Time	Flow[1] M3/day	Temp[1] oC	pH[1] S.U.	Cl[1] mg/l	Turbidity FTU	Susp. solids mg/l	Diss. solids mg/l	Settle. solids mg/l	Conductivity umhos/cm	Diss. oxygen mg/l	BOD_5 mg/l	$CBOD_5$ mg/l	TOC mg/l
390006 (002)														
9-18-84	1430	1400	28.5	7.5	U	130	22	920	<4	1125	0.9	---	---	97
9-18-84	1940	1100	27.0	7.6	U	120	28	850	6	1112	0.1	210 LH	---	90
9-19-84	0045	680	27.0	7.1	U	100	23	860	<4	1095	0.1	---	---	89
9-19-84	0740	1100	24.5	7.1	U	86	19	810	STR	1072	0.1	180 LH	---	82
9-19-84	1040	1100	25.0	6.7	U	82	15	790	STR	1056	0.2	---	---	79
9-19-84	1430	---	28.0	7.6	U	140	51	730	6	1027	4.5	---	---	76
9-19-84	1935	---	27.0	7.2	U	96	27	740	<4	1029	2.0	120	---	75
9-19-84	2340	---	26.5	7.2	U	83	28	740	<4	1025	1.2	---	---	73
390004 (001)														
9-18-84	1525	5100	28.0	8.4	U	---	34	870	---	---	---	230 LH	---	100
9-19-84	1110	8200	27.0	7.5	U	---	73	690	---	---	---	180 LH	---	76
Downstream														
9-18-84	1555	---	17.5	8.1	---	5.2	5	420	STR	---	---	---	---	2.86
Intake														
9-18-84	1540	---	17.5	8.4	U	3.8	8	390	STR	590	9.5	<2	<2	2.63

		Nitrite nitrogen mg/l	Nitrite& nitrate nitrogen mg/l	Ammonia nitrogen mg/l	Kjeldahl nitrogen mg/l	Total phosphorus mg/l	Ortho-phosphate mg/l	Chloride mg/l	Alkalinity (as $CaCO_3$) mg/l	Total aluminum ug/l
390006 (002)										
9-18-84	1430	0.02	0.02 DM	0.06 DM	5.3	0.14	0.05	98	117	---
9-18-84	1940	0.02	0.01 DM	0.06 DM	4.9	0.13	0.05	96.	121	---
9-19-84	0045	0.02	0.01 DM	0.09 DM	4.6	0.14	0.05	96.6	124	---
9-19-84	0740	0.02	0.02 DM	0.22 DM	4.5	0.12	0.05	94.	127	---
9-19-84	1040	0.01	0.01 DM	0.29 DM	4.6	0.10	0.04	95.	131	---
9-19-84	1430	0.98	0.84 DM	0.25 DM	4.8	0.14	0.03	96.	124	<1000
9-19-84	1935	0.14	0.10 DS	0.50	5.0	0.13 DS	0.02	96.	121	<1000
9-19-84	2340	0.07	0.09 DS	0.56	4.6	0.11 DS	0.02	96.	124	<1000
390004 (001)										
9-18-84	1525	---	<0.01	0.08 DM	7.7	0.02	---	---	---	---
9-19-84	1110	---	2.2	0.12 DS	4.9	0.21	---	---	---	---
Intake										
9-18-84	1540	0.03	0.68	0.102	0.49	0.04	0.016	37.4	224	<1000

1 - Values determined in the field at time of sampling.

Allied Paper Company

Table 2 Continued...

Date	Time	Total cadmium ug/l	Total chromium ug/l	Total copper ug/l	Total iron ug/l	Total nickel ug/l	Total lead ug/l	Total titanium ug/l	Total zinc ug/l	O&G Grav mg/l	O&G I.R. mg/l	Scan 1 Purgeable Halocarbons ug/l
390006 (002)												
9-18-84	1430	---	---	---	---	---	---	---	---	5	3	<5
9-18-84	1940	---	---	---	---	---	---	---	---	8	4	---
9-19-84	0740	---	---	---	---	---	---	---	---	5	2	<10
9-19-84	1430	<20	<50	<20	<100	<50	<50	<1000	60	4	2	---
9-19-84	1935	<20	<50	<20	<100	<50	<50	<1000	150	4	2	---
9-19-84	2340	<20	<50	<20	280	<50	<50	<1000	<50	5	3	---
390004 (001)												
9-18-84	1525	---	---	---	---	---	---	---	---	8	5	<10
9-19-84	1110	---	---	---	---	---	---	---	---	---	---	<10
Intake												
9-18-84	1540	<0.2	<50	<20	370	<50	<50	<1000	<50	<2	<1	<1

		Scan 2 Purgeable Aromatic Hydrocarbons ug/l	Scan 3 Chlorinated Hydrocarbons, PCB's & Organo-chlorine Pesticides: Aroclors ug/l	Scan 3 Chlorinated Hydrocarbons, PCB's & Organo-chlorine Pesticides: All Others ug/l	Scan 8 Phenols ug/l
390004 (001)					
9-18-84	1525	<5	---	---	---
9-19-84	1110	<5	---	---	---
Intake					
9-18-84	1540	---	<0.10	<0.05	<5

1 - Values determined in the field at time of sampling.

Allied Paper Company

Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report

Parameter (Unit)	NPDES Permit Final Limitations		September Monthly OPerating Report				Survey Results[1]
	Daily Average	Daily Maximum	Monthly Average	Monthly Maximum	9-18-84	9-19-84	
390006 (002)							
Flow (M^3/day)	---	---	931	1560	1060	1030	800 (1400, 1100, 680, 1100, 1100)
BOD_5 (kg/day)	---	177	153	174	171	160	200 (210, 180, 120)
Suspended solids (kg/day)	---	230	24	89.4	17	15	20 (22, 28, 23, 19, 15, 51, 27, 2
Settleable solids (ml/l)	---	---	0.05	0.05	0.05	0.05	
(mg/l)	---	---	---	---	---	---	3 (<4, 6, <4, 6, <4, <4)
pH (S.U.	Not <6.5	Nor >9.5	---	7.0 Min 6.5	6.8	6.9	(7.5, 7.6, 7.1, 7.1, 6.7, 7.6, 7.2, 7.2)

1 - Survey results are for the composite sample. Grab sample results are shown in parentheses( ).
To obtain MGD multiply M^3/day by 0.0002642.
To obtain lbs/day multiply kg/day by 2.205.
To obtain ^oF multiply ^oC by 1.8 and add 32.

Table 4 Comparison of the laboratory analytical results obtained by Allied Paper Company and the Environmental Protection Bureau from the split grab sample and comparison of independently obtained flow measurements.

Outfall	390006 (002)	
Sample Time & Date	9-18-84 @ 1430	
	Company	EPB
Flow[1] (M^3/day)	1000	800
	mg/l	
BOD_5	184.5	*
Suspended solids	18	22
Settleable solids	8.8	<4

*EPB sample not analyzed, because of laboratory scheduling conflicts.

1 - Flow reported corresponds to the 24-hour sampling period. Company flow obtained from split sheet.

Allied Paper Company

Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfalls	390006 (002)	
Survey Date From	10-25-82	9-18-84
To	10-26-82	9-19-84
	mg/l	mg/l
Suspended solids	25	28
Dissolved solids	600	820
Settleable solids	9	4
BOD_5	100	210 LH
TOC	59	85
Nitrite & nitrate nitrogen-N	0.64	0.03
Ammonia nitrogen-N	0.30	0.13
Kjeldahl nitrogen-N	2.2	4.8
Total phosphorus-P	0.06	0.12
	ug/l	ug/l
Phenol	4	21
Total aluminum (Al)	<1000	<1000
Total cadmium (Cd)	<20	<0.2
Total chromium (Cr)	<50	<50
Total copper (Cu)	<20	<20
Total lead (Pb)	<50	<50
Total nickel (Ni)	<50	<50
Total titanium (Ti)	<1000	<1000
Total zinc (Zn)	<50	<50
SCAN 3 - Chlorinated Hydrocarbons		
1,2-Dichlorobenzene	0.35	<0.05
2-Chloronapthalene	1.20	<0.05
Hexachlorobenzene	<0.1	<0.05
Other Chlorinated Hydrocarbons	<0.1	<0.05
SCAN 8 - Phenols		
Pentachlorophenol	<10	<5.3
Other Phenols	U	<5.3

Table 6 Sample Preservation

Parameter	Preservative
TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (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).
Base-neutral Extractables Purgeable Organics	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Acid Extractables	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml). 40 drops H_2SO_4/1000 ml (to pH <2).

Samples preserved as required, cooled to 4°C with chain of custody maintained.

Lab Letter Codes

DM - Sample was diluted to reduce possible matrix interference.
DS - Sample was diluted due to other high values on a multi-channel analytical system.
LH - Quality control indicated possible low recovery. The actual level may have been higher than the reported value.
NB - Analytical method has not been approved for routine use. Due to possible low recovery, the actual level may have been higher than the reported value.
STR - Settleable residue was not analyzed due to low level of nonfilterable residue found. By definition, the settleable residue would be less than or equal to the nonfilterable residue.

Table 7

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-Trichloroethane
Trichloroethene

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene
Ethylbenzene
Styrene
Toluene
Xylene isomers (o, m, and p)

SCAN 3 - Chlorinated Hydrocarbons

g-BHC (lindane)
2-Chloronaphthalene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Octachlorocyclopentene
Pentachloronitrobenzene
1,2,4-Trichlorobenzene

SCAN 4 - Polychlorinated Biphenyl & Organochlorine Pesticide

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 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

Survey by:	Ralph Reznick, Environmental Engineer Chris Little, Water Quality Technician Joseph Hey, Water Quality Technician
Contact with Management:	Les Stoeffler
Laboratory Analyses by:	Environmental Protection Bureau Laboratory
Report by:	Ralph Reznick & Chris Little Point Source Studies Section Surface Water Quality Division Environmental Protection Bureau Michigan Department of Natural Resources

FIGURE. I

ALLIED PAPER MILLS
KALAMAZOO

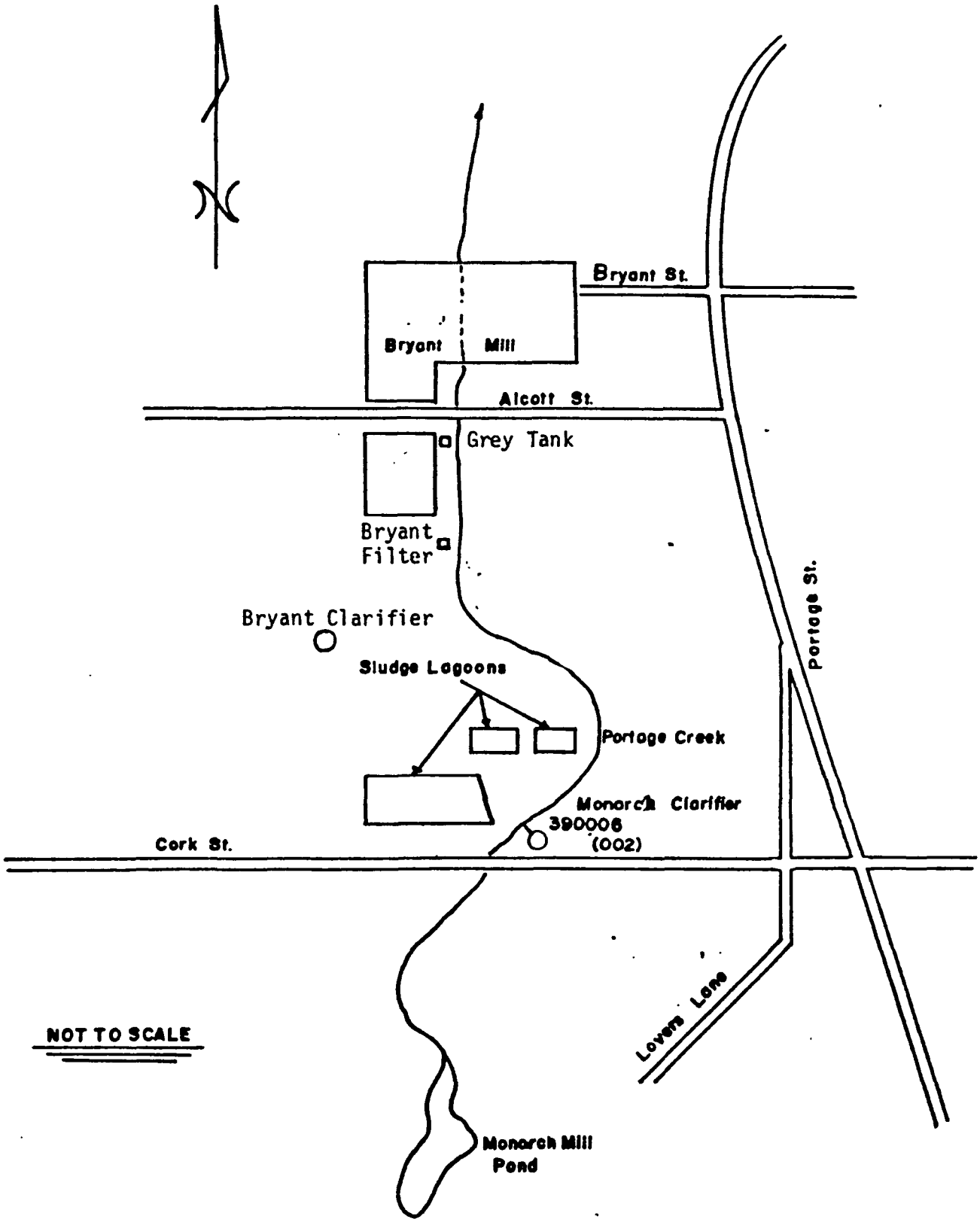
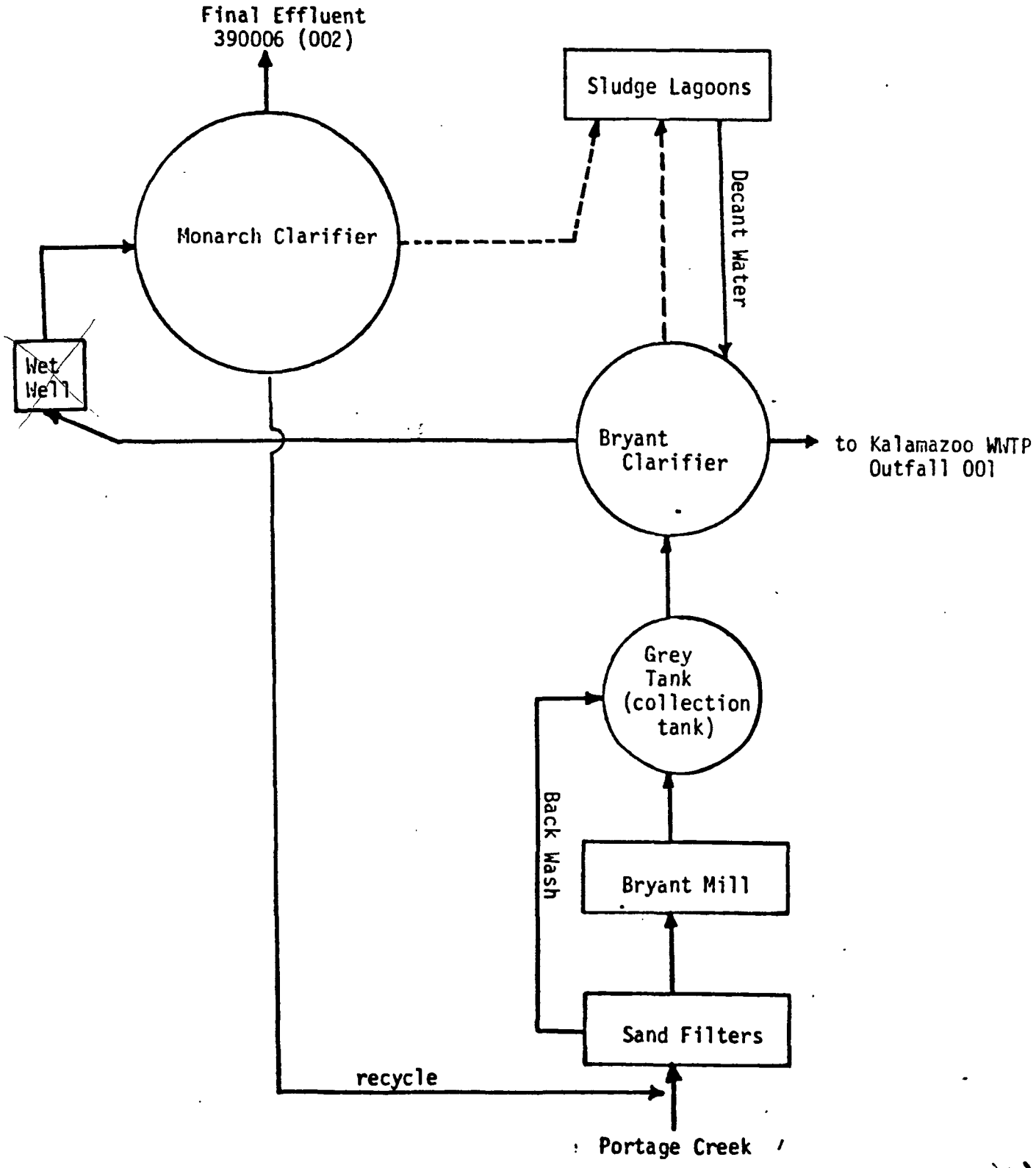


Figure 2 Allied Paper Company - Kalamazoo

Wastewater Treatment



TX 4/29/81

CITY OF KALAMAZOO, MICHIGAN

June 10, 1985

Mr. Andy Watson
Allied Paper Company
2030 Portage Road
Kalamazoo, MI 49001

Dear Mr. Watson:

The Kalamazoo Water Reclamation Plant is scheduled to begin operation of the complete treatment facilities in September of this year. By January 1, 1986, our plant must be in compliance with the stringent effluent limitations established by our NPDES Permit. Achieving and maintaining this compliance will require the best efforts of our staff and continued cooperation of our large industrial customers.

The treatment of paper industry wastewaters has proven to be an economical and successful program in Kalamazoo. An important ingredient in this relationship has been the successful preliminary or partial treatment of the wastewater prior to discharge to the City. This arrangement becomes even more important as we move into the new compliance program associated with the January 1, 1986, limitations.

In recent years, preliminary treatment of paper wastewater has been interrupted for short periods of time due either to equipment failure emergencies or scheduled maintenance on treatment equipment. The results of these untreated discharge periods has usually been negative upon the City system. In most cases, the City has been placed in a position where compliance is difficult and sometimes impossible.

It is clear to our staff that discharge of untreated paper industry wastewater cannot be allowed in the future if the new stringent limits are to be met. At this time, it is our assessment that a discharge of untreated paper wastewater for more than (4) four hours will place the City in non-compliance and, therefore, cannot be permitted.

You should begin to study this restriction and its impact upon your normal operating procedures. For discharges of more than (4) four hours untreated, other provision will have to be implemented by your plant.

We are available to discuss this restriction with you and provide more details, if needed. Our primary concerns are that the City does not violate the NPDES limits and that it not be necessary to terminate production at your facility due to the lack of provision for wastewater treatment.

Please contact us if you wish to discuss the matter further.

Sincerely,

Orlin K. Loen, P.E.
Director of Public Utilities

nb

DEPARTMENT OF PUBLIC UTILITIES, 415 Stockbridge Avenue, 49001-2898, 616-385-8149

allied

10-30-85

lawn sprinkling needs own meter! - tell new x-c

freshwater - creek + recycle
city water
reused white water - Xcess to process sewer

upgrade paper.

Bryant Sept 85 started to change more shower

Alcott - filter plant changes in process of H_2O treatment (adding polymers, chlorinating

Reed St. 2/85 consp. jumped again

floor drains to process

+ stop sewer bill on 3 meters
+ add employes ≈ 10 gal/d to monthly invoice

next letter to Allied,
R. Eaton, include

1. we need flow charts
2. allied should maintain spl line from wlin box to solenoid (incl. solenoid)
3. Clark's crews recommend.

EMPLOYMENT REPORT

	BUDGET		July 85		Aug. 85		Sept. 85		Oct. 85		Nov. 85		Dec. 85	
	HOURS	BAL.	HOURS	BAL.	HOURS	BAL.	HOURS	BAL.	HOURS	BAL.	HOURS	BAL.	HOURS	BAL.
MANUFACTURING														
BRYANT MILL														
Book - Mill C	87	6	87	8	85	7	86	7						
Book - Mill D	114	13	118	12	115	12	93	12						
Blade	18	2	10	2	9	2	1	2						
TOTAL	219	21	215	22	209	21	180	21						
Maintenance	71	6	68	6	65	6	67	6						
Power	16	1	13	1	13	1	14	1						
Yards	14	1	14	1	13	1	12	1						
Trucking	13	1	13	1	12	1	12	1						
Engineering		5	1*	4	1*	4		4						
General Mill		7	1*	6	1*	6		6						
Quality Control		3		3		3		3						
Samples	2	2	2	2	2	2	2	2						
Scheduling		3		4		4		4						
TOTAL MAN'FTING	335	50	327	50	316	49	287	49						
MARKETING/SALES														
Pulp Sales		2		1		2		2						
No. Carolina		2		2		2		2						
Chicago		3		4		5		5						
New York		7		6		6		6						
Kalamazoo		11		10		9		9						
TOTAL MKTG/SALES		25		23		24		24						
ADMINISTRATIVE														
Purchasing	1*	3		3	1*	3	1*	3						
Traffic		3		3		3		3						
Accounting		18		17		17		17						
Data Processing		4		4		4		4						
Research & Dev.	4*	20	6*	20	6*	20	5*	20						
Exec. & Admin.	1*	8	2*	7	2*	8	2*	8						
TOTAL ADMIN.	6	56	8	54	9	55	8	55						
GRAND TOTAL	341	131	335	127	325	128	295	128						
UNION EMPLOYEES	335		325		314		287							

do not bill circled #'s

335

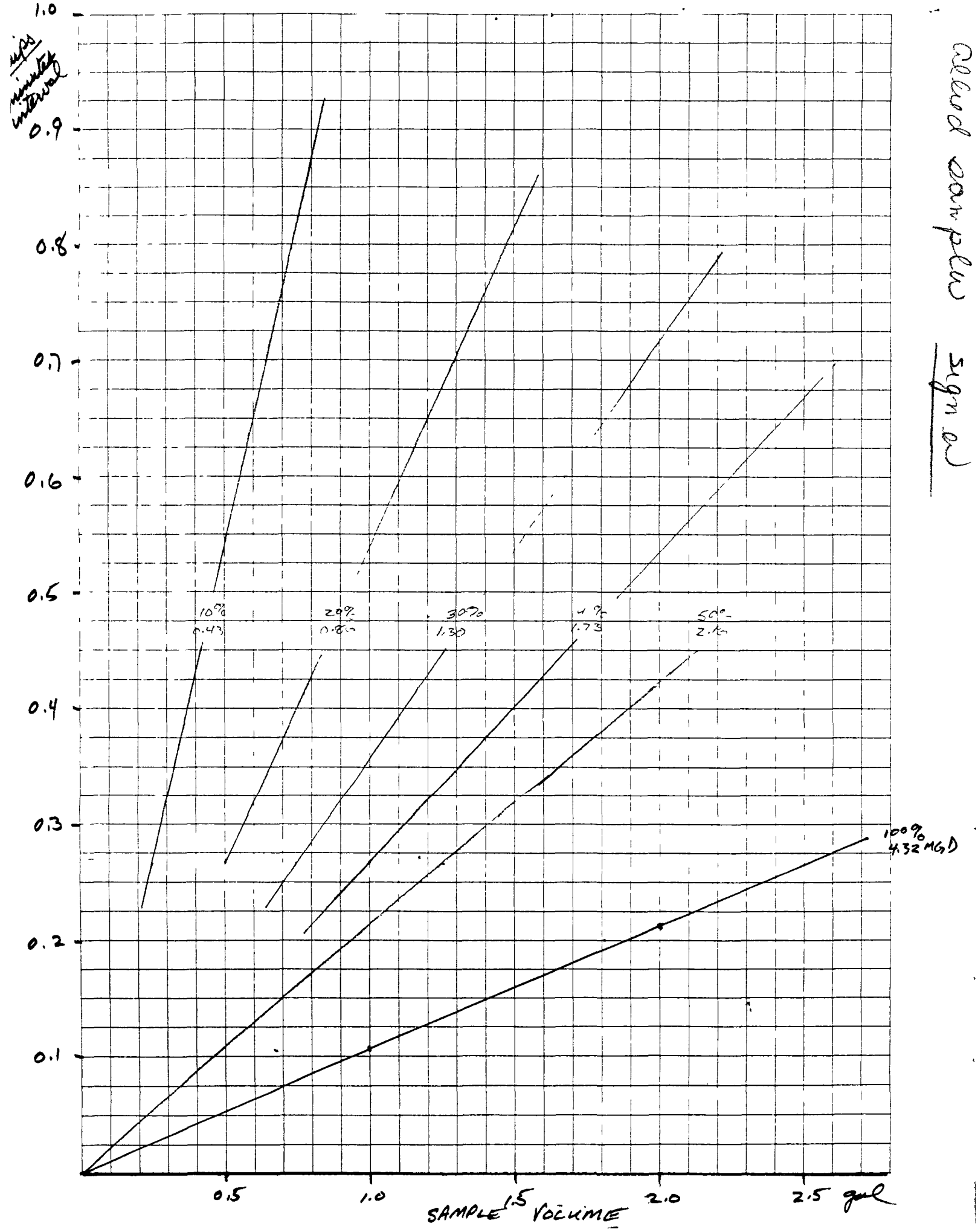
**Part-time Clerical Employees

Jerri Barnett
will write letter to Allied
re: (A) billing changes (no sewer 3 meters)
add domestic adj to invoice
(B) no credits will be issued
(C) Spurlin to send personnel report quarterly

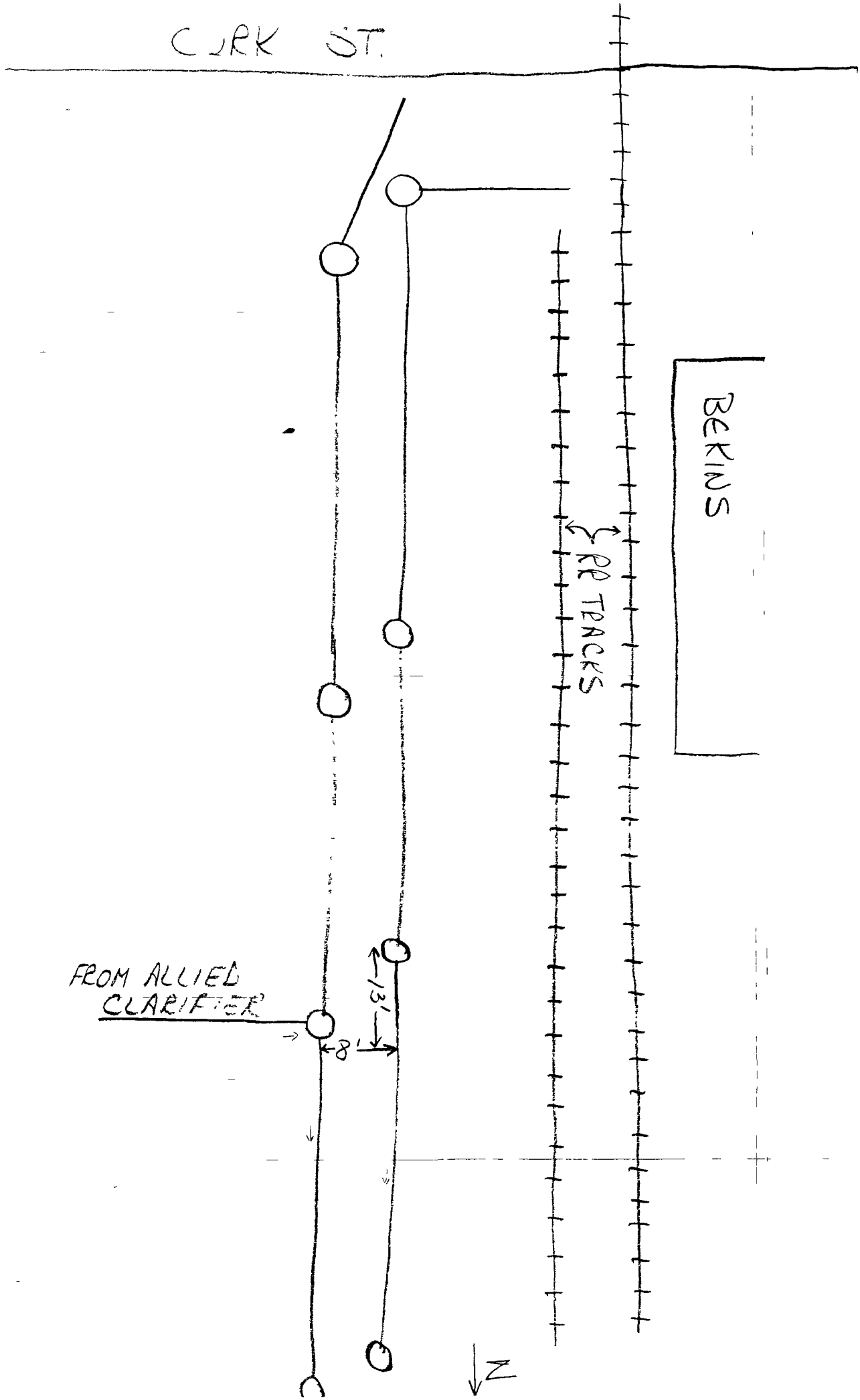
Eldred to write letter re:
(A) meter 10/7 to 10/23
- bill will be correct when sent out
- add domestic invoice

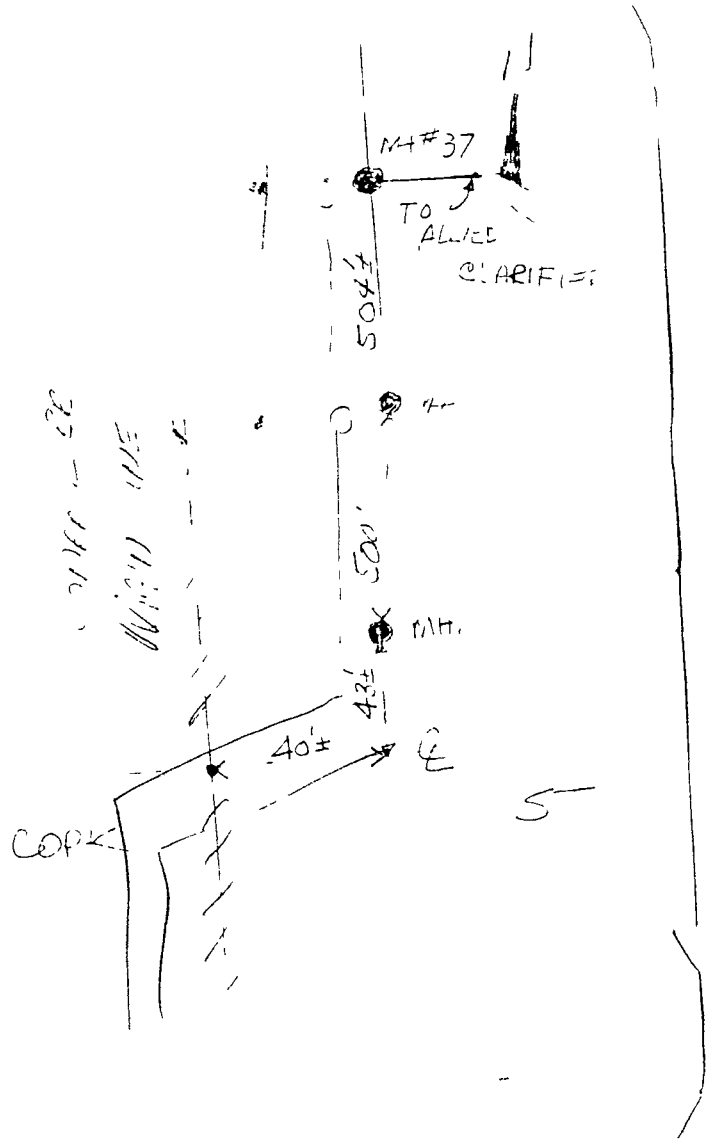
(B) City maintain sampler, but not line from well box or solenoid

(C) recommendations from instrumentation crew to be included in another correspondence



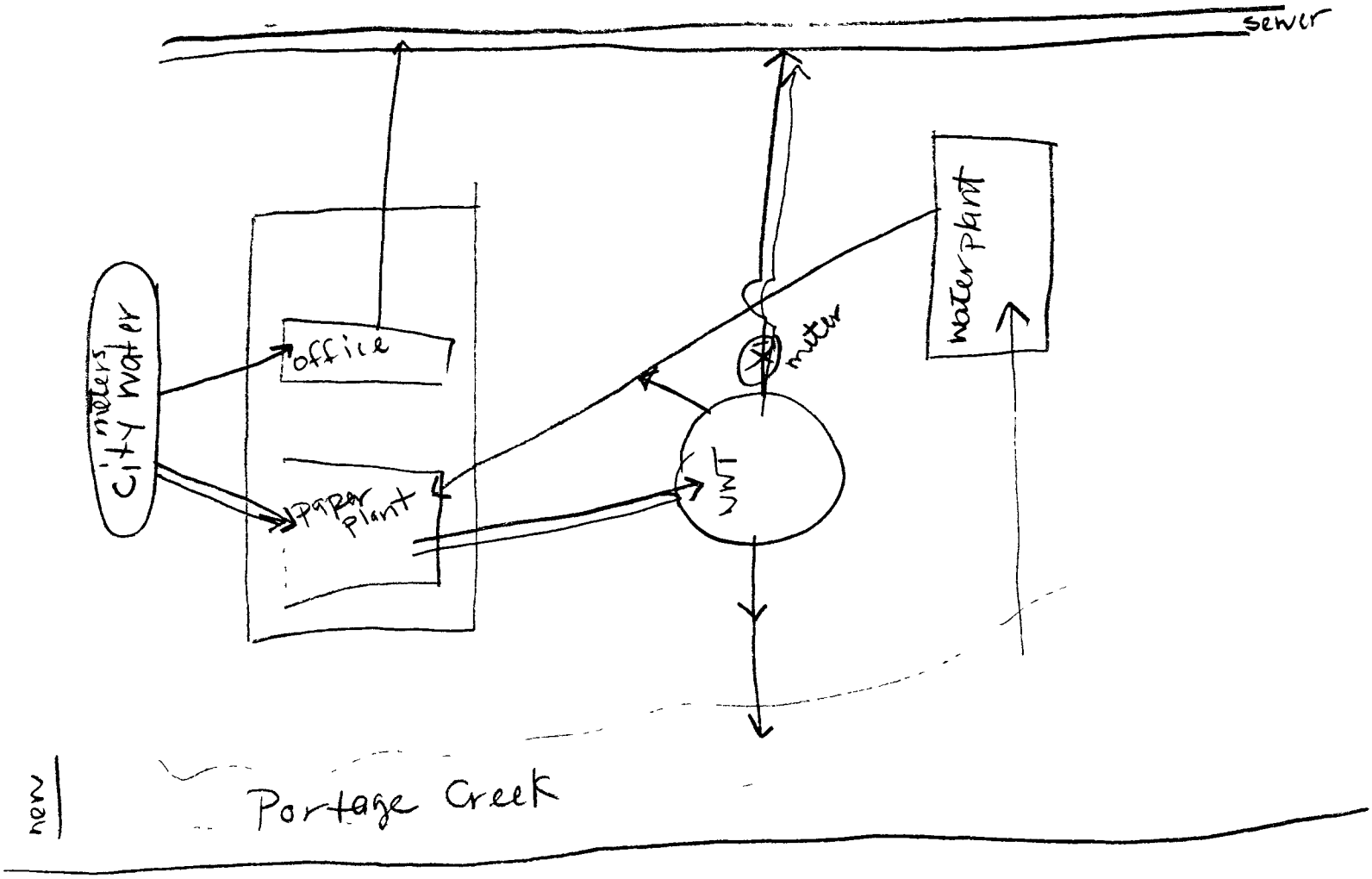
Allied sample signal
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
10%
0.43
20%
0.86
30%
1.30
40%
1.73
50%
2.16
100%
4.32 MGD
0.5
1.0
1.5
2.0
2.5 gal
SAMPLE VOLUME


CLARK ST.
BEKINS
RR TRACKS
FROM ALLIED CLARIFIER
13'
8'
N

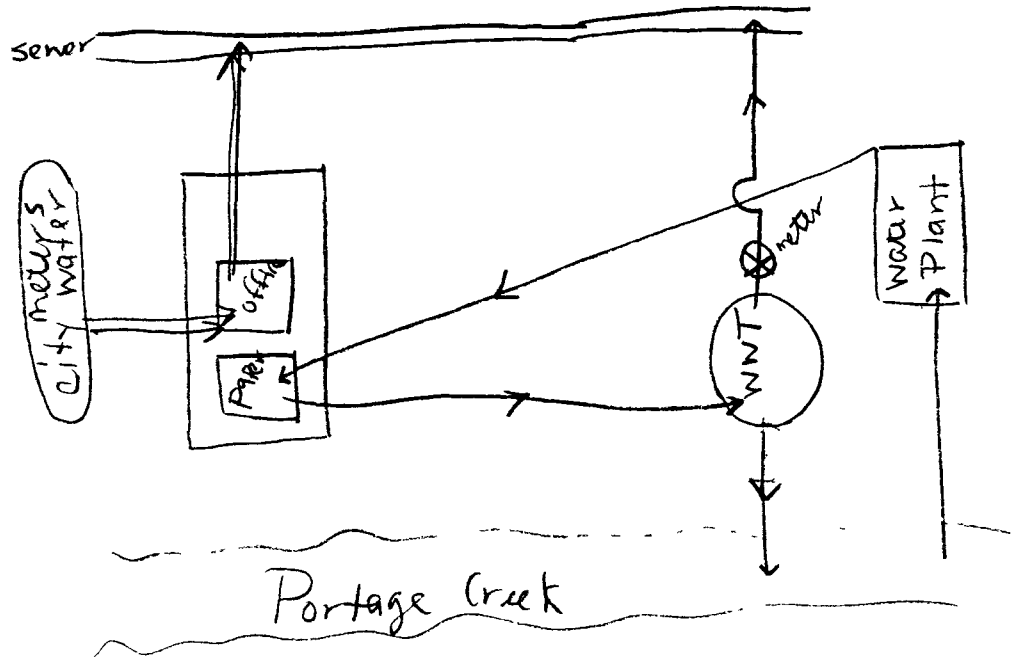


Allied Paper Co.
Disch. from Clarifier.

new


sewer
City meters
City water
office
paper plant
WNT
meter
water plant
Portage Creek

old


sewer
City meters
City water
office
paper
WNT
meter
water Plant
Portage Creek

71 m^3 / person / year

70 – 75 m^3 / year / person

= 75 gpd / person (based on

443 empl

330 hourly
51

381

excessive amounts

Land ail 3½ gpm 2,000 l

11 30 pm – 2 am today

Meeting -

How big a composite - 1 gallon is no problem

48" mur

Sampler ownership

Allied Paper -

If they have a day

Question on pre-treat Credits - ? NH_3 ↑

How this apply to costs

Who owns station
more definition of Control

Union

Control - Do we have the right to lock up

Whether we buy the sampler

Maint - Servicing ownership

Control - Why - trust

Lab charges "85"
NH_3 ↑ affect
Surchg + credit
lab fees
days there is a credit

amt NH_3 - who or how does
on

5:1 dist.(Allied)

SAMPLE		~~[illegible]~~ 89F		Blank					
# Mls. Used		10	25	40					
(D.F.) Dilution Factor		25	10	1.25					
Absorbance		189	.337	025					
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		2.614	2.368	.000					

TEST DATE 2-4-85 SAMPLE DATE 2-85 ANALYZED BY BOD

2.5 mg/l

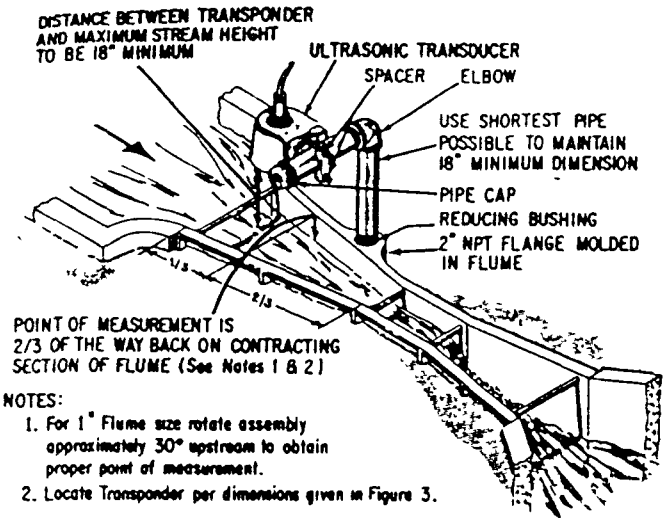
SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

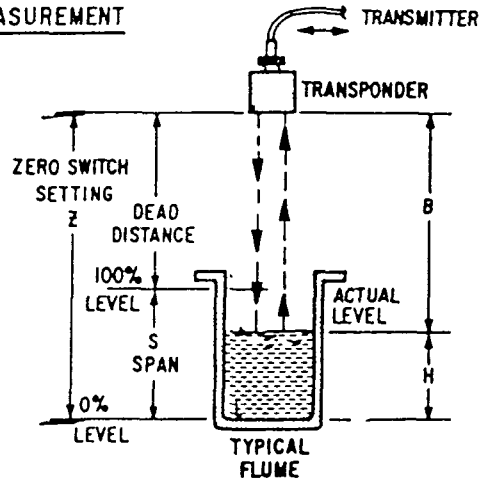
TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

TYPICAL FLUME FLOW MEASUREMENT



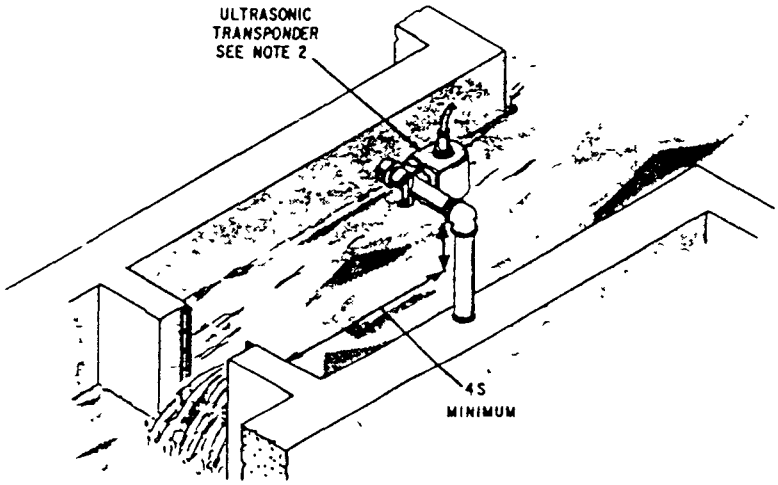
NOTES:

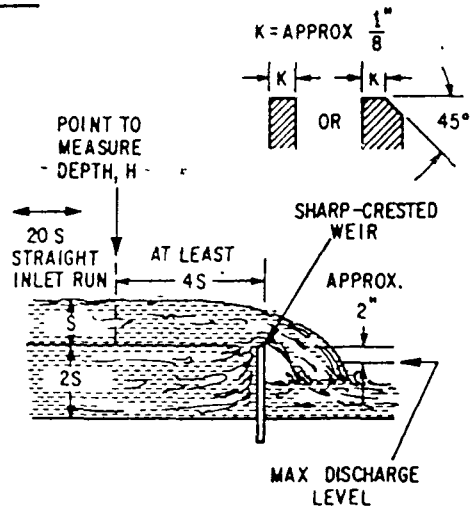
1. For 1" Flume size rotate assembly approximately 30° upstream to obtain proper point of measurement.
2. Locate Transponder per dimensions given in Figure 3.



S = MAXIMUM HEAD
H = ACTUAL HEAD

TYPICAL WEIR FLOW MEASUREMENT

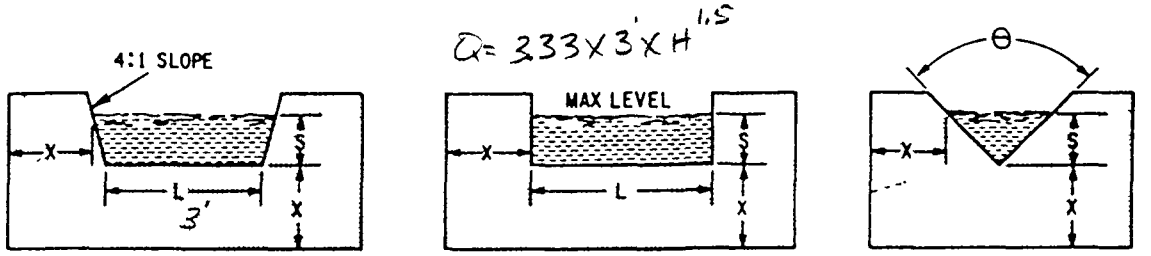




PROFILE OF SHARP-CRESTED WEIR

Practice Book

$Q = 3.33 \times 3' \times H^{1.5}$



CIPOLLETTI WEIR | RECTANGULAR WEIR | TRIANGULAR OR V-NOTCH WEIR

THREE COMMON TYPES OF SHARP-CRESTED WEIRS WITH COMPLETE END CONTRACTION

BI-2163

L = AT LEAST 3S X = AT LEAST 2S

$Q = 3.33 \times 3 - (\phi.2 \times H)\, H^{1.5}$

FIGURE 2. TYPICAL TRANSPONDER INSTALLATION

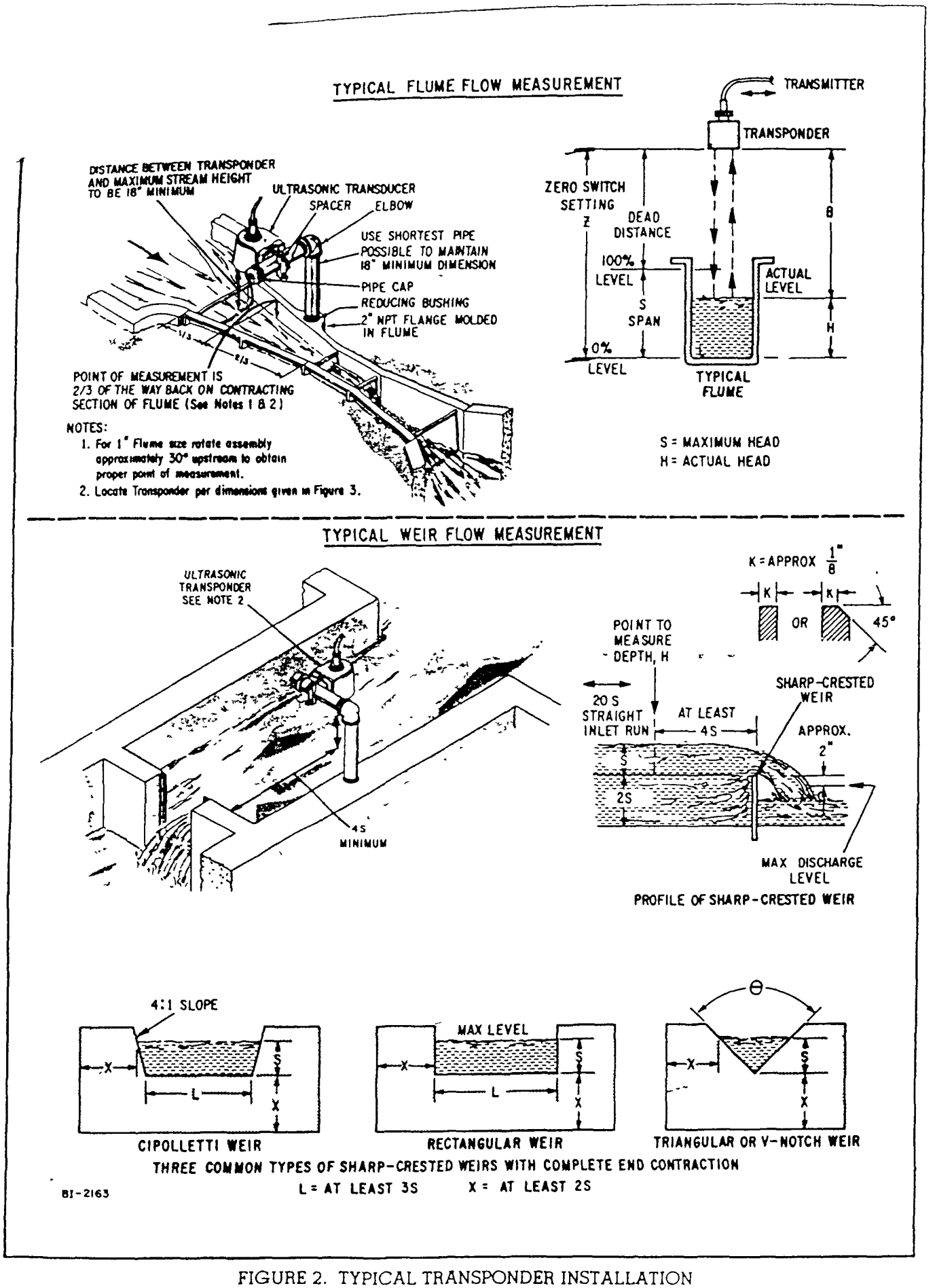


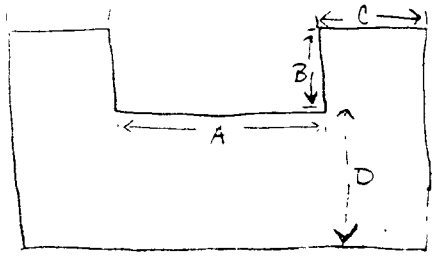
FIGURE 2. TYPICAL TRANSPONDER INSTALLATION

Allied Paper Co. Inc. 2-4-87

Jim -

It looks to me like the formula allied gave you is for a rectangular weir with end contractions and that is correct since thats what they have.

Do you have the dimensions on the weir:



(see attached diagram for recommended dimensions)

A= 36"
B= 12 1/8"
C= 11 5/8"
D= 24 7/8"

Jean Eldred
2-3-87

36
23 1/4
59 1/2

36

CITY OF KALAMAZOO, MICHIGAN

November 4, 1985

Mr. R. Richard Eaton
Manager - Utilities Maintenance and Engineering
Allied Paper Company
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Mr. Eaton:

This letter is a follow-up to our meeting on October 30, 1985. Your staff discovered that the Wastewater flow meter malfunctioned from October 7, 1985 through October 23, 1985. It is estimated that the flows recorded for these dates were high by approximately 300,000 gallons per day. Your flows have been corrected for the above dates prior to billing, (see attached Table I). Additionally, your invoice for October 1985 will contain the adjustment for domestic wastewater usage by employees in Mill C and Mill D. The adjustment will be calculated from your employment report, which will be submitted to us quarterly. We will assume that each employee uses 70 gallons per day for domestic type use. For the October billing there will be an adjustment for 335 employees.

We also discussed the issue of maintenance and operation of the sampling and flow metering equipment. I have requested that our instrumentation group evaluate the Allied wastewater flow metering system. You will be informed of their appraisal as soon as possible.

Please contact us if you have any questions.

Sincerely,

Jean Eldred

Jean Eldred
Industrial Service Supervisor

j

attach

c R. Amundson
B. Freer
J. Barnett
J. Orton
File

Table I

Date	Metered Flow Reading	Corrected Flow Gallon	M^3
10-7-85	1,288,340	988,340	3741
10-8-85	1,024,100	724,100	2741
10-9-85	1,169,010	869,010	3289
10-10-85	1,806,480	1,506,480	5702
10-11-85	1,231,620	931,620	3526
10-12-85	1,047,190	747,190	2828
10-13-85	1,341,000	1,041,000	3940
10-14-85	1,565,000	1,265,000	4788
10-15-85	1,078,600	778,600	2947
10-16-85	1,451,300	1,151,300	4358
10-17-85	1,354,060	1,054,060	3990
10-18-85	1,432,140	1,132,140	4285
10-19-85	1,432,010	1,132,010	4285
10-20-85	1,412,900	1,112,900	4212
10-21-85	1,205,900	905,900	3429
10-22-85	1,492,620	1,192,620	4514
10-23-85	1,202,040	902,040	3414

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

P. O. BOX 2528 KALAMAZOO, MICHIGAN 49003

R. RICHARD EATON PE/CPE
MANAGER, UTILITIES, MAINTENANCE
& ENGINEERING

(616) 345-7131

October 30, 1985

City of Kalamazoo
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Ms. Jean Eldred

Dear Ms. Eldred:

City Sewer Meter

We are confirming our conversation with you today concerning the subject meter being out of calibration from October 7 to October 23, 1985. We calibrated the meter at 5:00 P.M. on October 23. It was out by 300,000 gals./day in the City's favor.

It is on this basis that we are requesting you to reduce our October sewer bill by 17 x 300,000 ÷ 264.2 = 19,304M^3. This calculates to $6176.96.

We will work with you and your people to establish a schedule to check the meters authenticity.

Sincerely,

R. Richard Eaton

/deo
cc: T. Flanagan
J. Spurlin
M. Smith
S. Oakleaf

10/7 - 10/23 @ 5 00 recal meter. credit

17 days @ 300,000 gpd

- R Eaton - says needs to be calibrated twice a week

letter

- sampler

Andy watson

allied intend to calibrated 2/weekly

CITY OF KALAMAZOO

PUBLIC UTILITIES
WASTEWATER DIVISION
415 STOCKBRIDGE
KALAMAZOO, MICHIGAN 49001
PHONE (616) 385-8149

INVOICE No 32571

DATE June 19, 1985

DEPARTMENT CREDIT REFERENCE
590-000-646.04

TERMS: NET 30 DAYS

Allied Paper
2030 Portage
Kalamazoo, MI 49001

PLEASE FOLLOW THESE INSTRUCTIONS

1. MAKE CHECK PAYABLE TO CITY TREASURER.
2. MAIL TO CITY HALL AT BELOW ADDRESS.
3. PLEASE RETURN A COPY WITH REMITTANCE

YOUR PURCHASE ORDER NUMBER

Sanitary sewer charges for the month of May 1985		
A. MINIMUM CHARGE:	$ 4.50	
B. COMMODITY CHARGE (Flow)		
68,818 m^3 x $.32/$m^3$ =	22,021.76	
C. SURCHARGES:		
a. B.O.D.*	415.60	
b. T.S.S.*	-0-	
*Based on daily computations		
	$22,441.86	
LESS MAY CREDIT	(-3,254.78	
TOTAL DUE:		$ 19,187.08

THE CITY OF KALAMAZOO, 241 WEST SOUTH STREET, KALAMAZOO, MICH. 49007 **INVOICE**

A-140 REV. 7/81

6/21/85 –
did not bill for ~~June~~ May 1–14 (flow only)
total of 10,075,900 gal, Barb will bill
ASAP

BILLING PERIOD THE M TH OF MA/

DAY	FLOW M³	SUSPENDED SOLIDS MG/L	KGS SOLIDS	SOLIDS-290 MG/L	KGS SUR SOLIDS	SURCHARGE	BOD MG/L	KG BOD	BOD-250 MG/L	KG SUR BOD	SURCHARGE	TOTAL SURCHARGE
1	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
2	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
3	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
4	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
5	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
6	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
7	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
8	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
9	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
10	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
11	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
12	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
13	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
14	0	0	0 0	0	0 0	$ 0 00	0	0 0	0	0 0	$ 0 00	$ 0 00
15	3952	85	335 9	0	0 0	$ 0 00	276	1090 7	26	102 7	$ 18 60	$ 18 60
16	3937	20	78 7	0	0 0	$ 0 00	300	1181 1	50	196 8	$ 35 63	$ 35 63
17	4726	70	330 6	0	0 0	$ 0 00	246	1162 6	0	0 0	$ 0 00	$ 0 00
18	4890	108	528 1	0	0 0	$ 0 00	338	1613 7	80	391 2	$ 70 81	$ 70 81
19	5498	36	197 9	0	0 0	$ 0 00	224	1231 6	0	0 0	$ 0 00	$ 0 00
20	3408	140	477 1	0	0 0	$ 0 00	289	984 8	39	132 9	$ 24 06	$ 24 06
21	3555	40	142 2	0	0 0	$ 0 00	350	1244 4	100	355 5	$ 64 35	$ 64 35
22	3888	60	233 3	0	0 0	$ 0 00	240	933 2	0	0 0	$ 0 00	$ 0 00
23	3619	40	144 7	0	0 0	$ 0 00	249	901 0	0	0 0	$ 0 00	$ 0 00
24	3461	44	152 3	0	0 0	$ 0 00	275	951 8	23	86 5	$ 15 66	$ 15 66
25	3634	4	14 5	0	0 0	$ 0 00	237	861 3	0	0 0	$ 0 00	$ 0 00
26	2826	88	248 7	0	0 0	$ 0 00	345	974 9	95	268 5	$ 48 59	$ 48 59
27	4846	60	290 7	0	0 0	$ 0 00	317	1536 0	67	324 7	$ 58 76	$ 58 76
28	3819	64	244 4	0	0 0	$ 0 00	228	870 8	0	0 0	$ 0 00	$ 0 00
29	3240	52	168 5	0	0 0	$ 0 00	232	751 7	0	0 0	$ 0 00	$ 0 00
30	4287	64	274 4	0	0 0	$ 0 00	352	1509 0	102	437 3	$ 79 14	$ 79 14
31	5233	24	125 6	0	0 0	$ 0 00	243	1271 5	0	0 0	$ 0 00	$ 0 00
TOTALS	68818		3987.9		0 0	$0 00		19070 1		2296 1	$415 60	$415 60

DAY	290-SOLIDS MG/L	CREDIT KGS SOLIDS	CREDIT	250-BOD MG/L	KG CREDIT BOD	CREDIT	TOTAL CREDIT	MAXIMUM CREDIT	ALLOWED CREDIT - LAB FEE
1	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
2	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
3	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
4	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
5	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
6	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
7	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
8	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
9	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
10	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
11	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
12	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
13	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
14	290	0 0	$ 0 00	250	0 0	$ 0 00	$ 0 00	$ 0 00	$ 0 00
15	205	810 1	$ 188 76	0	0 0	$ 0 00	$ 188 76	$ 359 62	$ 156 76
16	270	1063 0	$ 247 67	0	0 0	$ 0 00	$ 247 67	$ 358 25	$ 215 67
17	220	1039 7	$ 242 25	4	18 9	$ 3 42	$ 245 68	$ 430 06	$ 213 68
18	182	890 0	$ 207 36	0	0 0	$ 0 00	$ 207 36	$ 444 98	$ 175 36
19	254	1396 5	$ 325 38	26	142 9	$ 25 87	$ 351 26	$ 500 32	$ 319 26
20	150	511 2	$ 119 10	0	0 0	$ 0 00	$ 119 10	$ 310 11	$ 87 10
21	250	888 8	$ 207 10	0	0 0	$ 0 00	$ 207 10	$ 323 54	$ 175 10
22	230	894 3	$ 208 38	10	38 9	$ 7 04	$ 215 41	$ 353 84	$ 183 41
23	250	904 6	$ 210 78	1	3 6	$ 0 65	$ 211 44	$ 329 29	$ 179 44
24	246	851 4	$ 198 38	0	0 0	$ 0 00	$ 198 38	$ 314 95	$ 166 38
25	286	1039 3	$ 242 16	13	47 2	$ 8 55	$ 250 71	$ 330 69	$ 218 71
26	202	570 8	$ 133 00	0	0 0	$ 0 00	$ 133 00	$ 257 16	$ 101 00
27	230	1114 5	$ 259 67	0	0 0	$ 0 00	$ 259 67	$ 440 95	$ 227 67
28	226	863 2	$ 201 12	22	84 0	$ 15 21	$ 216 33	$ 347 57	$ 184 33
29	238	771 1	$ 179 67	18	58 3	$ 10 56	$ 190 22	$ 294 84	$ 158 22
30	226	968 8	$ 225 74	0	0 0	$ 0 00	$ 225 74	$ 390 10	$ 193 74
31	268	1391 9	$ 324 31	7	36 6	$ 6 63	$ 330 94	$ 476 17	$ 298 94
TOTALS		15969 3	$3720 00		430 6	$77 93	$3798 78		$3254.78

CITY OF KALAMAZOO, MICHIGAN

May 1, 1985

Mr. R. Richard Eaton
Allied Paper Incorporated
Division of SCM Corporation
2030 Portage Street
Kalamazoo, Michigan 49001

Regarding Pretreatment Credit: Biochemical Oxygen Demands and Total Suspended Solids.

Dear Sir:

On May 1, 1985 your sampling site for the subject credits was examined and was found to be satisfactory. We will begin the sampling procedure on May 2, 1985.

We request that we be notified immediately of any condition that would interfere with obtaining a proper sample and/or flow data.

Proper security and equipment maintenance have been previously discussed. Any necessary changes, alterations, etc., can be renegotiated as needed.

Sincerely,

Jack Wagemaker,
Industrial Services Supervisor

j

c File

DEPARTMENT OF PUBLIC UTILITIES, WATER RECLAMATION PLANT
1415 N HARRISON, KALAMAZOO, MICHIGAN 49007 (616) 385-8157

CITY OF KALAMAZOO

DEPARTMENT OF PUBLIC UTILITIES
415 STOCKBRIDGE AVENUE
KALAMAZOO, MICHIGAN 49001-2898

TO Rohel W. Amundson, WQG.S

DATE 4/15/85

SUBJECT Sampler [illegible] Allied Papers

MESSAGE

I talked to Andrew Watson of Allied Paper [illegible] to cancel our request for money for a sampler. [illegible] decided not to wait for us, he [illegible] with Peterson & Matz. I [illegible] to return the papers to us. I [illegible] in purchasing.

REPLY

Copy: Jean Eldred, DWCO ✓

FORM NO. P-140

Jack

City of Kalamazoo

INTER-OFFICE MEMO

To: Richard G. Simms, General Superintendent

From: Rohel W. Amundson, Water Quality General Supervisor

Date: April 2, 1985

Subject: ALLIED PAPER INC. -- PURCHASE OF STATIONARY WASTEWATER SAMPLER

Allied Paper Incorporated has requested that we allow them pretreatment credits for their on-site removal of B.O.D. and suspended solids. As referenced in my March 4th memo to you on this subject, the City must be in control of the flow metering and sampling equipment and laboratory tests, for pretreatment credits to be allowed. Oakley Herrick's staff has examined Allied's flow metering equipment and determined it to be suitable for our use. Jack Wagemaker has examined the proposed sampler site and judged it to be suitable for our use (some additional provisions may be necessary for physical security of the sampler).

The remaining hurdle for complying with Allied's request is the acquisition of a stationary sampler. The cost of the purchase can be recovered in six (6) monthly billings to Allied. We feel that we must specify sole-source purchase of the sampling device so that it can be compatible with our other existing industrial stationary sample sites.

Allied is very anxious for quick action on our part regarding purchase of the stationary sampler. The word from the vendor (American Sigma) is that they have only one (1) unit in stock, and that it must be spoken for early next week or it will be gone. If we miss the in-stock sampler, we will have to live with the attached price quote which states 8 - 10 weeks for shipment.

The word from Purchasing is that we must have Commission approval for this purchase, even though its cost will be recovered from Allied. What do you advise that we do to properly submit this request for purchase to the City Manager and the Commission? Is there any problem with using Utilities' funds to carry the purchase? If needed, I can provide a written rationale for sole source purchase that would be similar to that recently given for purchase of portable wastewater samplers from ISCO.

a

attach

c J.Wagemaker
J.Eldred
File

3-28-85

Memo:
TO JAW + RWA
FROM: J. Eldred
RE: Allied

Andy Watson called me today regarding the purchase of the sampler for their preatreatment credits. He would like to know if the sampler has been ordered. I am unable to answer his question. Who is taking responsibility for this project? Where are we at as far as approval of their proposal? Is the flow monitoring system satisfactory?

Please let me know at your earliest convience (i.e. by Friday 3-29-85) Where we are and who the contact should be for Andy to work with on this project.

Thank You.

Andy Watson

How best to ship - to W.W + pick up or direct.

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

P. O. BOX 2528 KALAMAZOO, MICHIGAN 49003

R RICHARD EATON PE/CPE
MANAGER, UTILITIES, MAINTENANCE
& ENGINEERING

(616) 345-7131

March 11, 1985

Mr. Richard Simms
General Superintendent
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Re: Pre-Treatment Credits

Dear Dick,

We are pursuing our recent request to receive pre-treatment credits. We would appreciate your help in obtaining and setting up the equipment. Proceed with ordering the sampler. The American Sigma model 1600 sampler is acceptable. We would also like the Lift Back Clear Cover for Sample Chamber and Controls (16019) and the Proportional to Flow 4 - 20 mA Signal (1981), options. **Since the sample compartment can be locked, will you require a locked cage around the whole unit?**

We will begin preparing a location for the sampler in the pumphouse on the Southside of Bryant Clarifier, where the recorder/totalizer is presently located. We will purchase and install a sample delivery pump and pipe to bring a sample from the City weir box, on the North side, to the sampler. Another pump will be installed to remove the flow from the sampler. When the sampler arrives we will install it and turn it over to the City to operate, control, and maintain, along with the flowmeter, recorder/totalizer, and sample delivery pump. We would appreciate a record of calibration work and maintenance. **We will continue to change and retain the flow recorder charts.** We have enclosed information on our flowmeter, recorder/totalizer for your use.

- continued -

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

P. O. BOX 2528 KALAMAZOO, MICHIGAN 49003

R RICHARD EATON PE/CPE
MANAGER, UTILITIES, MAINTENANCE
& ENGINEERING

(616) 345-7131

March 11, 1985

Mr. Richard Simms
General Superintendent
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Re: Pre-Treatment Credits

Dear Dick,

We are pursuing our recent request to receive pre-treatment credits. We would appreciate your help in obtaining and setting up the equipment. Proceed with ordering the sampler. The American Sigma model 1600 sampler is acceptable. We would also like the Lift Back Clear Cover for Sample Chamber and Controls (16019) and the Proportional to Flow 4 - 20 mA Signal (1981), options. **Since the sample compartment can be locked, will you require a locked cage around the whole unit?**

We will begin preparing a location for the sampler in the pumphouse on the Southside of Bryant Clarifier, where the recorder/totalizer is presently located. We will purchase and install a sample delivery pump and pipe to bring a sample from the City weir box, on the North side, to the sampler. Another pump will be installed to remove the flow from the sampler. When the sampler arrives we will install it and turn it over to the City to operate, control, and maintain, along with the flowmeter, recorder/totalizer, and sample delivery pump. We would appreciate a record of calibration work and maintenance. **We will continue to change and retain the flow recorder charts.** We have enclosed information on our flowmeter, recorder/totalizer for your use.

- continued -

We would appreciate being able to pay for the sampler in six (6) installments on our monthly bill. We also would like to have an estimate of the total costs we will be assessed. The cost figures should include the capital amount for equipment and the monthly charges for the sampling and testing services.

Sincerely yours,

R. Richard Eaton

/kmj

cc: A. Watson
D. Kirk
T. Flanagan
J. Spurlin
U. Stoeffler

City of Kalamazoo

Bus

3150	ref
255	4-20 MA
125	Self
40	Drought
32	Jug

(Delivery 8 weeks)

$3602.00 with extra Jug.

8 weeks or less

$1\frac{1}{2} - 2\frac{1}{2}$

30 min. 37.5' - each

3 - 90 4 - 150 minutes

30 min x 3 37.5 min. x 4

90 min. 150 min.

$\boxed{114}$

Cost of pick-up

4-hours-2 people

pick up at

- James River
- Geo-Pac
- Parchment
- Meredith
- Upjohn
- Portage Creek
- Allied Paper

7 stops

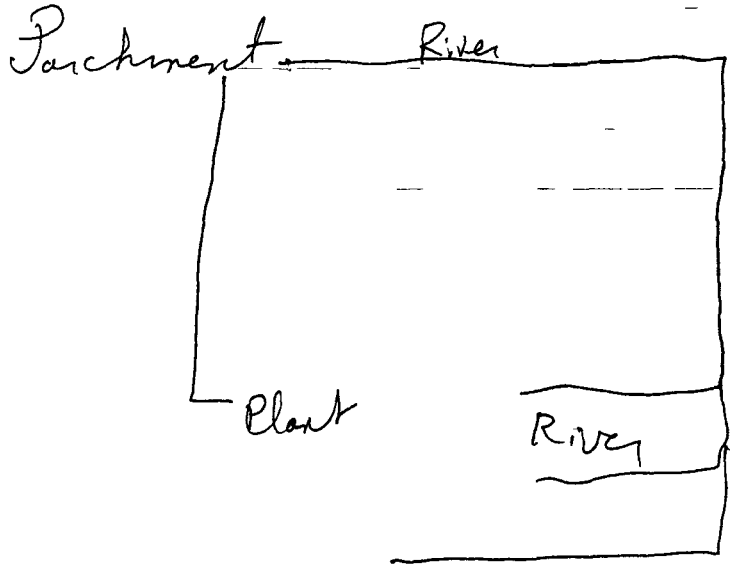
4 Sampling

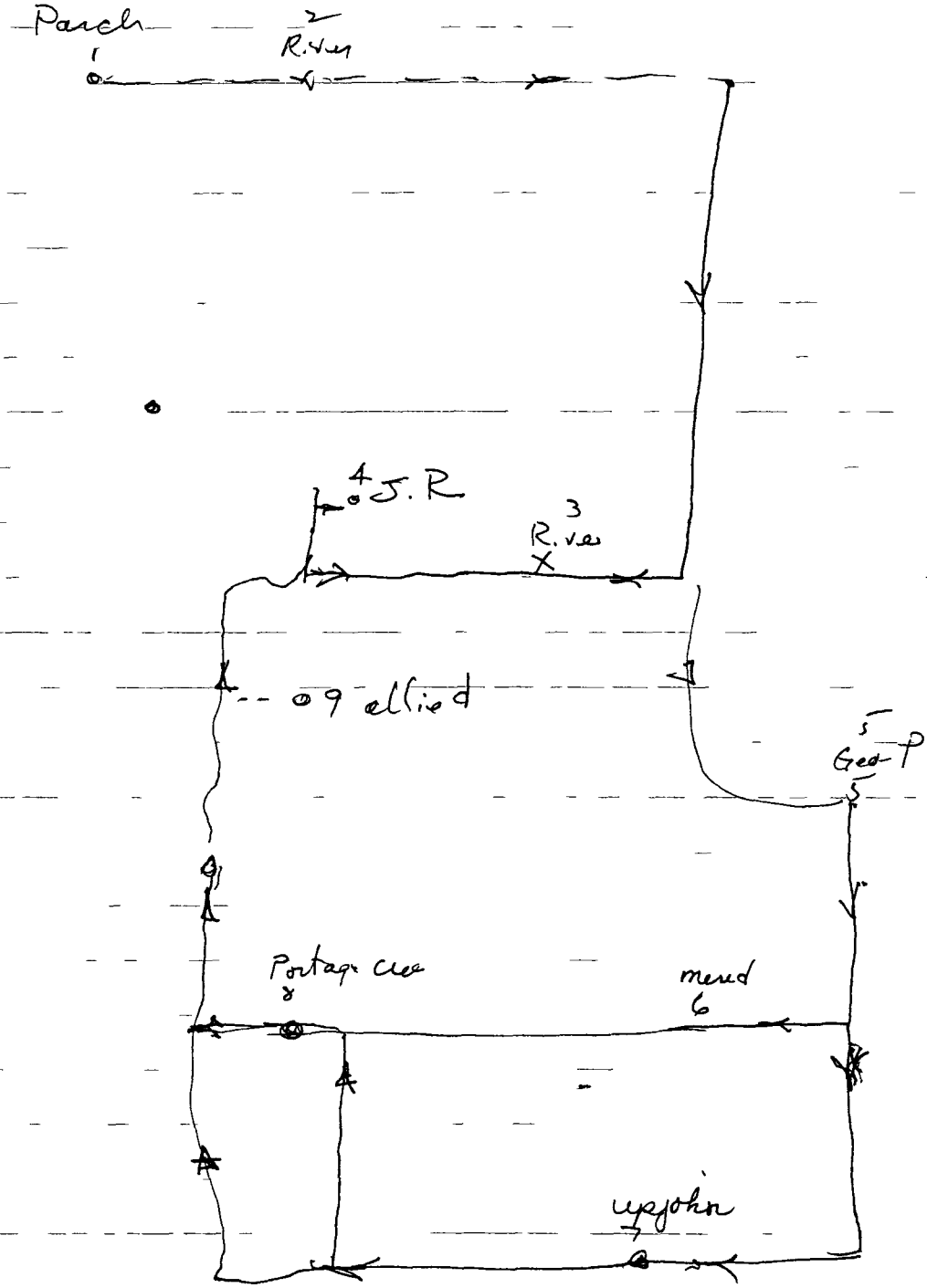
3 meter reading

Travel- J.R Short

Pauch-

Geo Pac




Parch
1
2
River
4
J.R
3
River
9 allied
5
Geo-P
Portage Cre
8
mered
6
upjohn
7

CITY OF KALAMAZOO

DEPARTMENT OF PUBLIC UTILITIES
415 STOCKBRIDGE AVENUE
KALAMAZOO, MICHIGAN 49001-2898

TO
Oakley Herrick
Process Engineer
Water Sys. Com. / Pub. Utilities

DATE 3/28/85

SUBJECT Allied Paper - Flow meter

MESSAGE
As soon as you advise us on the flowmeter we will proceed to order the sampler requested as per D. Lewis's approval. It appears the customer is anxious to get started.

REPLY

FORM NO. P-140

City of Kalamazoo

INTER-OFFICE MEMO

To: OAKLEY HERRICK PROCESS CONTROL MANAGER

From: ROLLA W. WILLIAMS INSTRUMENT TECHNICIAN RWW

Date: MARCH 26, 1985

Subject: ALLIED PAPER FLOW MONITORING SYSTEM

On March 25th I attended a meeting at Allied Paper with Andy Watson and John Stiegmeyer from the waste treatment department. The purpose of the meeting was to inspect the flow monitoring equipment and location. The following observations were made;

1. The equipment was manufactured by Robertshaw and is 4-20mA.
2. The chart is actual readout in gallons per minute. Inc. of 200 gpi
3. The totalizer is times 10.
4. The equipment is 5-6 years old.
5. Calibration is usually performed monthly by checking wet well levels and 4-20 signal.
6. Some drift has been noted during temperature change of the zero adjustment.
7. Flow during the last four weeks has been about 800,000 gpd.
8. Equipment is located in a stilling well adjacent to a weir which will necessitate cleaning periodically.
9. There is fairly easy access to the equipment.

There was discussion about the location of a sampler to be furnished by the City and installed by Allied. It will be located in a locked building which contains the flow recorder. The entire complex will be locked as well as the entrance at the road leading to the complex. This should be sufficient and a cage around the sampler would not be required unless there are other reasons for it. *
There is no on site water but the clarifier water could be used for flushing if necessary.

In summary they reported no major problems since the equipment was installed and have been satisfied with the accuracy of the equipment and I could find no reason to believe otherwise.

* We did not request this recommendation JAW

FORM 893 REV. 6-15-84

.ne coater polymeric synthetic latices and/or natural water soluble polymers are used as binders. Styrene-butadiene, vinyl acetate and acrylics are all used from time to time. Of the five paper machines one has flotation type save-alls and four have disc-type save-alls. The company plans to convert the remaining flotation type save-all to a disc type save-all in the future.

Final product is shipped from the plant on rolls. No finishing of the paper is done at the plant.

The location of the plant is shown in Figure 1.

Water Supply & Wastewater Treatment

Process water used at the Bryant Mill is obtained from the Portage Creek and is chorinated and passed through sand filters prior to use. Potable water for the mill is obtained from the City of Kalamazoo. Domestic wastes are discharged to the city's sanitary sewer system. Boiler water is obtained from company owned wells and is softened by a hot lime-soda process prior to use.

Process wastewaters from excess white water, coating machine water, filter backwash, softener backwash and boiler blowdown are discharged to the 100 foot diameter Bryant clarifier. A copolymer is added to improve settling. A portion of the Bryant clarifier effluent is discharged to the City of Kalamazoo sanitary sewer system via outfall 390004 (001). The remainder of the Bryant clarifier effluent is discharged to the 90 foot diameter Monarch clarifier. Flow is automatically apportioned by a computerized system utilizing a total organic carbon analyzer. Some of the MOnarch clarifier effluent may be recycled for process water. Recycled water is treated with alum. The remaining Monarch clarifier effluent is discharged to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is sprayed onto drying lagoons on plant property adjacent to the clarifiers.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

RECEIVED
MAR 18 1985
SWQD-Plainwell

Report of an
Industrial Wastewater Survey
Conducted at

ALLIED PAPER COMPANY
All Outfalls No. 390222
NPDES No. MI 0000779
Kalamazoo County
1608 Lake Street, Kalamazoo, MI
September 18 and 19, 1984

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Tuesday, September 18, 1984.

The results of this survey are compared to the numerical limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI 0000779. The survey loading for BOD was slightly greater than the daily maximum (Table 3).

The survey results are compared to the self-monitoring results reported in the company's Monthly Operating Report (Table 3).

A grab sample was split with the company for comparison of laboratory results. The comparison is presented in Table 4. The flow monitored during the survey period was about 20 M^3/day less than the company's monitored flow for the same period (Table 4).

The last survey performed at this facility was in October, 1982. The comparison of survey results is presented as Table 5.

Plant Process

The Allied Paper Corporation produces bible paper, light weight printing papers and other specialty papers at its Bryant Mill in Kalamazoo. The mill operates 5 fourdrinier paper machines and one off-machine coater. The normal production of the mill is approximately 220 tons of product per day. The mill employs about 39U people and operates 24 hours per day, 7 days per week. 260

The mill uses bleached kraft pulps manufactured at other locations. Both softwood and hardwood pulps are used. Clay, titanium dioxide and calcium carbonate are used as fillers. Very small amounts of direct dyes are used for tinting some grades of paper. Rosin and alum are used for sizing. On some grades of paper small amounts of melamine formaldehyde is used to produce wet strength. No bleaching is done in the normal process of making paper.

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

P. O. BOX 2528 KALAMAZOO, MICHIGAN 49003

R RICHARD EATON PE/CPE
MANAGER, UTILITIES, MAINTENANCE
& ENGINEERING

(616) 345-7131

March 11, 1985

Mr. Richard Simms
General Superintendent
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Re: Pre-Treatment Credits

Dear Dick,

We are pursuing our recent request to receive pre-treatment credits. We would appreciate your help in obtaining and setting up the equipment. Proceed with ordering the sampler. The American Sigma model 1600 sampler is acceptable. We would also like the Lift Back Clear Cover for Sample Chamber and Controls (16019) and the Proportional to Flow 4 - 20 mA Signal (1981), options. Since the sample compartment can be locked, will you require a locked cage around the whole unit?

We will begin preparing a location for the sampler in the pumphouse on the Southside of Bryant Clarifier, where the recorder/totalizer is presently located. We will purchase and install a sample delivery pump and pipe to bring a sample from the City weir box, on the North side, to the sampler. Another pump will be installed to remove the flow from the sampler. When the sampler arrives we will install it and turn it over to the City to operate, control, and maintain, along with the flowmeter, recorder/totalizer, and sample delivery pump. We would appreciate a record of calibration work and maintenance. We will continue to change and retain the flow recorder charts. We have enclosed information on our flowmeter, recorder/totalizer for your use.

- continued -

We would appreciate being able to pay for the sampler in six (6) installments on our monthly bill. We also would like to have an estimate of the total costs we will be assessed. The cost figures should include the capital amount for equipment and the monthly charges for the sampling and testing services.

Sincerely yours,

R. Richard Eaton

/kmj

cc: A. Watson
D. Kirk
T. Flanagan
J. Spurlin
U. Stoeffler

City of Kalamazoo

INTER-OFFICE MEMO

To: Myself.

From: Jack Wagemaker, Industrial Services Supervisor

Date: March 5, 1985

Subject: Allied Paper Company - Discussion on Pretreatment Removal Credits

Requirements:

1. Alright to use present building if flow is piped to this area. Sampler system is locked, e.g., a wire gate.

2. Flow must be piped from Weir box - measured by a capacitance probe (check proper calibration).

3. Can have split samples upon request.

4. Calibration and maintenance of equipment is our authority.

5. We can purchase a sampler (Sigma 16001) and charge back Allied Paper on a monthly basis out of credits.

6. We must have a letter of intent to expedite this program - under above approved conditions.

7. Hydraulic problems such as levels, wind direction and effect, solids distribution require a direct piping of Allied effluent from the weir box to the sanitary sewer system.

h

c File

City of Kalamazoo

INTER-OFFICE MEMO

To: Richard G. Simms, General Superintendent

From: Rohel W. Amundson, Water Quality General Supervisor

Date: March 4, 1985

Subject: ALLIED PAPER INC. -- PRETREATMENT REQUEST

1) Sampling and Metering Station Access:

Access to the station must be under the sole control of the City.

2) Station Location:

The station must be located in a secure area where it will directly monitor the flows to the City sewer system.

3) Equipment Purchase:

The cost of sampling and metering equipment shall be borne by the industry (cost up front or monthly billings?). The equipment installed must be approved by the City. Preference will be given to Fischer/Porter metering gear and Sigma sampling systems (to minimize the list of required spare parts and calibration equipment that must be used for the City's industrial accounts).

4) Station Operation:

The City is solely responsible for maintenance, calibration and operation of the sampler and metering equipment.

5) Pretreatment Credits:

Pretreatment credit can legally be offered only where there is capital equipment specifically installed to remove the contaminant in question. Dilution of a contaminant cannot be construed as lessening the loading received by the City's treatment facilities.

a

c J.Wagemaker
J.Eldred
File

CITY OF KALAMAZOO, MICHIGAN

February 22, 1985

Mr. Andy Watson
Allied Paper Company
2030 Portage
Kalamazoo, MI 49001

Dear Andy:

BREAKDOWN OF 1985 WASTEWATER SERVICE RATES

This letter is in response to your request for a breakdown on how the Allied Paper Company rates were calculated in the December 26, 1984, Wastewater Rate Update by CH2M HILL. Allied Paper Company flow in 1985 is projected on the basis of 1984 volume an strengths - 1,533,026 m^3 or 405,025,470 gal., BOD 150 mg/l, SS 45 mg/l, and NH_3 1 mg/l.

OM&R COST ALLOCATIONS TO CUSTOMER CLASSES

Municipal Collection and Pump Station 405,025,470 gal. x $\frac{\$0.1670}{1,000 \text{ gal.}}$	$ 67,639
Municipal Interceptor 405,025,470 gal. x $\frac{\$0.1420}{1,000 \text{ gal.}}$	57,514
Municipal Primary Treatment Administrative Cost 405,025,470 gal. x $\frac{\$0.0909}{1,000 \text{ gal.}}$	36,817
Industrial Surveillance & Pretreatment Adm. Cost 405,025,470 gal. x $\frac{\$0.0094}{1,000 \text{ gal.}}$	3,807
Joint Volume Cost Flow 405,025,470 gal. x $\frac{\$0.0395}{1,000 \text{ gal.}}$	15,999
BOD 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *250 ppm x $\frac{\$82.19}{1,000 \text{ gal.}}$	69,408
SS 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *290 ppm x $\frac{\$105.80}{1,000 \text{ gal.}}$	103,641

Joint Volume Cost (Cont.)

NH_3 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *19 ppm x $\frac{\$162.86}{1{,}000 \text{ lb.}}$ $ 10,452

*standard domestic Strength

Billings

12 bills x $2.30/bill 28

Industrial Surveillance

365 calls @ $33.64/call 12,279

I/I (Allied is 1 customer, total system has 32,064 customers)

$\frac{1}{32{,}064}$ x $550,169 17

TOTAL Allied OM&R Cost $377,601

CAPITAL COST ALLOCATIONS TO CUSTOMER CLASSES

Municipal Pump Station and Collection

405,025,470 gal. x $\frac{\$0.0553}{1{,}000 \text{ gal.}}$ $ 22,398

Municipal Interceptor

405,025,470 gal. x $\frac{\$0.0648}{1{,}000 \text{ gal.}}$ 26,246

Municipal Primary Treatment

405,025,470 x $\frac{\$0.0220}{1{,}000 \text{ gal.}}$ 8,911

Joint Costs

Flow 405,025,470 gal. x $\frac{\$0.0460}{1{,}000 \text{ gal.}}$ 18,631

BOD 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 250 ppm x $\frac{\$18.41}{1{,}000 \text{ gal.}}$ 15,547

SS 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 290 ppm x $\frac{\$18.31}{1{,}000 \text{ gal.}}$ 17,936

NH_3 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 19 ppm x $\frac{\$179.56}{1{,}000 \text{ gal.}}$ 11,524

Surcharge Credits

BOD $405{,}025{,}470 \text{ gal.} \times \frac{8.34 \text{ lb.}}{\text{gal.}} \times (250 - 150)\text{ppm} \times \frac{\$18.41}{1{,}000 \text{ lb.}}$ $ (6,219)

SS $405{,}025{,}470 \text{ gal.} \times \frac{8.34 \text{ lb.}}{\text{gal.}} \times (290 - 45)\text{ppm} \times \frac{\$18.31}{1{,}000 \text{ lb.}}$ (15,153)

NH_3 $405{,}025{,}470 \text{ gal.} \times \frac{8.34 \text{ lb.}}{\text{gal.}} \times (19 - 1)\text{ppm} \times \frac{\$179.56}{1{,}000 \text{ lb.}}$ (10,918)

Surcharge Credit Cost Allocation

$\frac{1{,}533{,}026 \text{ m}^3}{35{,}423{,}260 \text{ m}^3} \times \$234{,}378$ 10,143

I/I (Based on Allied Total Customers)

$\frac{1}{32{,}064} \times \$299{,}654$ 9

TOTAL Allied Capital Cost . . . . . $ 89,182

Allied TOTAL Revenue

$377,601 + $89,182 = $466,783

The above calculations follow the methodology that is further demonstrated in the July 1983 Wastewater Rate Study by CH2M HILL. It is my understanding that you have a copy of this study. To give you some background on that study, I am enclosing a copy of my February 24, 1984, letter to Jack Brodhagen, which gave a breakdown on how the City of Kalamazoo rates were developed. If you have any questions, please give me a call.

Sincerely,

Orlin K. Loen, P.E.
Director of Public Utilities

nb

enc

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

February 15, 1985

Mrs. Jean Eldred
Industrial Waste Compliance Officer
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Dear Jean,

We would like to formally request that Allied Paper receive pre-treatment credits for the waste water discharged to the City treatment plant. In order to receive the credit, we propose that:

1) The City purchase a flow proportional refrigerated wastewater sampler. The purchase price of the sampler be added to Allied's monthly bill when we begin receiving pre-treatment credits.

2) Allied install the sampler in the pumphouse on the South side of the Bryant Clarifier. This is where the flowmeter recorder/totalizer, that the City reads daily, is located. A sketch of the physical layout is attached.

3) Allied and the City agree that the City will be responsible for the operation and calibration of the flowmeter, recorder/totalizer and sampler. The City will keep a log book with calibration data, in the pumphouse. Allied will be responsible for repair work as requested by the City, will verify the calibration, and will change and retain the recorder charts.

4) Allied and the City will split samples.

5) After a suitable period of agreement in analysis of split samples, the City accept our test results for calculation of the credit.

We believe that these proposals will satisfy the requirements of the ordinance and allow us to demonstrate that our analysis can be used for determining the credit. As we discussed, Allied is required to do sampling and testing for BOD and suspended solids for our NPDES discharge permit. In addition, EPA requires that we have a quality assurance program.

- continued -

We presently split samples with the City on a weekly basis. We do daily testing on the flow to the City for our own use in process control.

Thanks for your help and that of Jack Wagemaker in outlining what the pretreatment credit is and how we can become eligible to receive it. We would like to proceed with this as soon as possible, if you have any questions or comments please call me. If the proposal is acceptable, please present it to the Director.

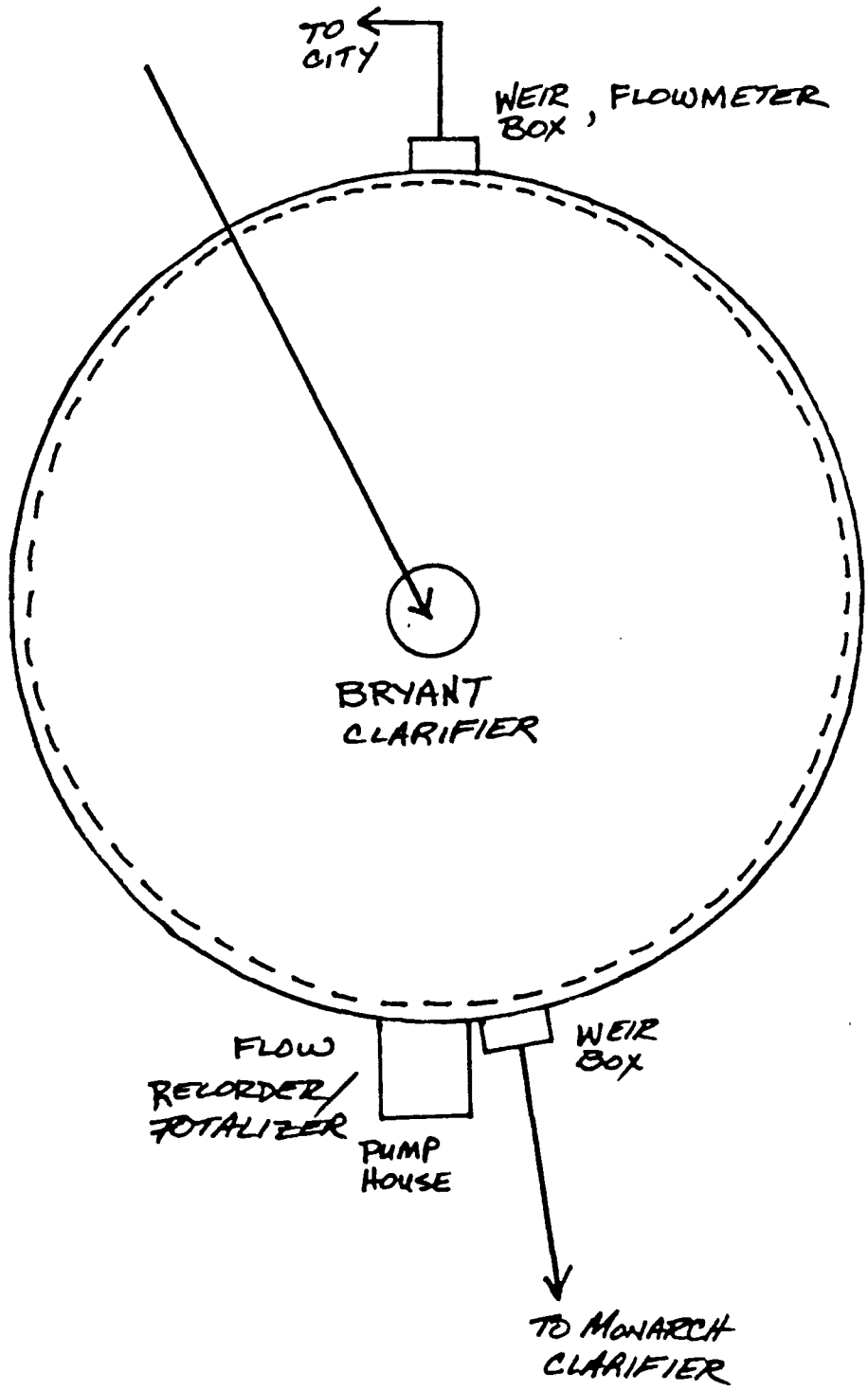
Sincerely yours,

A. W. Watson

A. W. Watson

/kmj

cc: D. Kirk
U. Stoeffler
D. Eaton


TO CITY
WEIR BOX, FLOWMETER
BRYANT CLARIFIER
FLOW RECORDER/ TOTALIZER
PUMP HOUSE
WEIR BOX
TO MONARCH CLARIFIER

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

Scratch Copy

February 15, 1985

Mrs. Jean Eldred
Industrial Waste Compliance Officer
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Dear Jean,

We would like to formally request that Allied Paper receive pre-treatment credits for the waste water discharged to the City treatment plant. In order to receive the credit, we propose that:

out of reserve ??

1) The City purchase a flow proportional refrigerated wastewater sampler. The purchase price of the sampler be added to Allied's monthly bill when we begin receiving pre-treatment credits.

2) Allied install the sampler in the pumphouse on the South side of the Bryant Clarifier. This is where the flowmeter recorder/totalizer, that the City reads daily, is located. A sketch of the physical layout is attached.

3) Allied and the City agree that the City will be responsible for the operation and calibration of the flowmeter, recorder/totalizer and sampler. The City will keep a log book with calibration data, in the pumphouse. Allied will be responsible for repair work as requested by the City, will verify the calibration, and will change and retain the recorder charts.

4) Allied and the City will split samples. OK

5) After a suitable period of agreement in analysis of split samples, the City accept our test results for calculation of the credit.

?

We believe that these proposals will satisfy the requirements of the ordinance and allow us to demonstrate that our analysis can be used for determining the credit. As we discussed, Allied is required to do sampling and testing for BOD and suspended solids for our NPDES discharge permit. In addition, EPA requires that we have a quality assurance program.

- continued -

TO: Mrs. Jean Eldred
FROM: A. W. Watson
February 15, 1985
Page Two

unsatisfactory

We presently split samples with the City on a weekly basis. We do daily testing on the flow to the City for our own use in process control.

Thanks for your help and that of Jack Wagemaker in outlining what the pretreatment credit is and how we can become eligible to receive it. We would like to proceed with this as soon as possible, if you have any questions or comments please call me. If the proposal is acceptable, please present it to the Director.

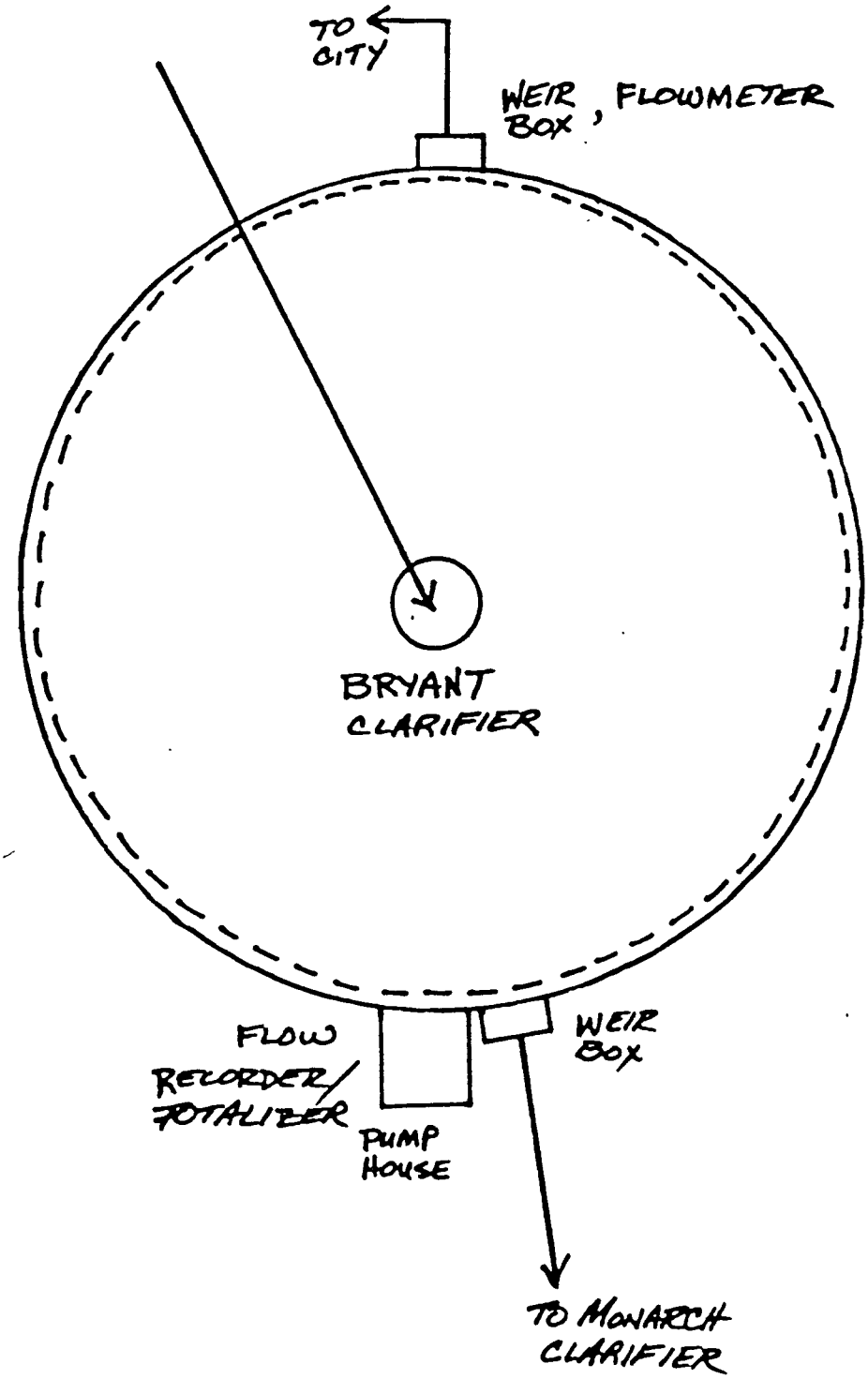
Sincerely yours,

A. W. Watson

A. W. Watson

/kmj

cc: D. Kirk
U. Stoeffler
D. Eaton


TO CITY
WEIR BOX, FLOWMETER
BRYANT CLARIFIER
FLOW RECORDER/TOTALIZER
PUMP HOUSE
WEIR BOX
TO MONARCH CLARIFIER

City of Kalamazoo

INTER-OFFICE**MEMO**

To: Rohel Amundson, Water Quality General Supervisor

From: Jack A. Wagemaker, Industrial Services Supervisor

Date: February 14, 1985

Subject: Allied Paper Company

Based on our meeting with Allied Paper Company personnel on February 8, 1985, regarding contract sampling and removal credits, it is necessary to obtain specifics regarding control of the sampling and flow metering system. Top management should provide us with specifics regarding the following questions so we can go on record with Allied Paper Company.

1. Should we not have authority to lock up access to flow meter and sampling system?

2. Should we not approve Allied personnel entrance for specific necessities?

3. Should we not have control and responsibility of flow meter and sampling mechanism maintenance on our own and/or in coopertion with Allied Paper?

4. Is it not required that Allied Paper installs and owns the required equipment even though we have complete control of the system.

5. Should we not be able to make the final decision on where the required equipment is installed on the effluent system to meet the control requirements?

6. Would the City of Kalamazoo consider paying the cost of equipment and installation and have Allied Paper pay the City back on a monthly basis?

h

c File

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

February 15, 1985

Mrs. Jean Eldred
Industrial Waste Compliance Officer
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Dear Jean,

We would like to formally request that Allied Paper receive pre-treatment credits for the waste water discharged to the City treatment plant. In order to receive the credit, we propose that:

1) The City purchase a flow proportional refrigerated wastewater sampler. The purchase price of the sampler be added to Allied's monthly bill when we begin receiving pre-treatment credits.

2) Allied install the sampler in the pumphouse on the South side of the Bryant Clarifier. This is where the flowmeter recorder/totalizer, that the City reads daily, is located. A sketch of the physical layout is attached.

3) Allied and the City agree that the City will be responsible for the operation and calibration of the flowmeter, recorder/totalizer and sampler. The City will keep a log book with calibration data, in the pumphouse. Allied will be responsible for repair work as requested by the City, will verify the calibration, and will change and retain the recorder charts.

4) Allied and the City will split samples.

5) After a suitable period of agreement in analysis of split samples, the City accept our test results for calculation of the credit.

We believe that these proposals will satisfy the requirements of the ordinance and allow us to demonstrate that our analysis can be used for determining the credit. As we discussed, Allied is required to do sampling and testing for BOD and suspended solids for our NPDES discharge permit. In addition, EPA requires that we have a quality assurance program.

- continued -

We presently split samples with the City on a weekly basis. We do daily testing on the flow to the City for our own use in process control.

Thanks for your help and that of Jack Wagemaker in outlining what the pretreatment credit is and how we can become eligible to receive it. We would like to proceed with this as soon as possible, if you have any questions or comments please call me. If the proposal is acceptable, please present it to the Director.

Sincerely yours,

A. W. Watson

A. W. Watson

/kmj

cc: D. Kirk
U. Stoeffler
D. Eaton

CITY OF KALAMAZOO, MICHIGAN

February 22, 1985

needs to be modified.

Mr. Andy Watson
Allied Paper Company
2030 Portage
Kalamazoo, MI 49001

Dear Andy:

BREAKDOWN OF 1985 WASTEWATER SERVICE RATES

This letter is in response to your request for a breakdown on how the Allied Paper Company rates were calculated in the December 26, 1984, Wastewater Rate Update by CH2M HILL. Allied Paper Company flow in 1985 is projected on the basis of 1984 volume an strengths - 1,533,026 m^3 or 405,025,470 gal., BOD 150 mg/l, SS 45 mg/l, and NH_3 1 mg/l.

OM&R COST ALLOCATIONS TO CUSTOMER CLASSES

Municipal Collection and Pump Station 405,025,470 gal. x $\frac{\$0.1670}{1,000 \text{ gal.}}$	$ 67,639
Municipal Interceptor 405,025,470 gal. x $\frac{\$0.1420}{1,000 \text{ gal.}}$	57,514
Municipal Primary Treatment Administrative Cost 405,025,470 gal. x $\frac{\$0.0909}{1,000 \text{ gal.}}$	36,817
Industrial Surveillance & Pretreatment Adm. Cost 405,025,470 gal. x $\frac{\$0.0094}{1,000 \text{ gal.}}$	3,807
Joint Volume Cost Flow 405,025,470 gal. x $\frac{\$0.0395}{1,000 \text{ gal.}}$	15,999
BOD 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *250 ppm x $\frac{\$82.19}{1,000 \text{ gal.}}$	69,408
SS 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *290 ppm x $\frac{\$105.80}{1,000 \text{ gal.}}$	103,641

Joint Volume Cost (Cont.)

NH_3 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x *19 ppm x $\frac{\$162.86}{1{,}000 \text{ lb.}}$ $ 10,452

*standard domestic Strength

Billings

12 bills x $2.30/bill 28

Industrial Surveillance

365 calls @ $33.64/call 12,279

I/I (Allied is 1 customer, total system has 32,064 customers)

$\frac{1}{32{,}064}$ x $550,169 17

TOTAL Allied OM&R Cost $377,601

CAPITAL COST ALLOCATIONS TO CUSTOMER CLASSES

Municipal Pump Station and Collection

405,025,470 gal. x $\frac{\$0.0553}{1{,}000 \text{ gal.}}$ $ 22,398

Municipal Interceptor

405,025,470 gal. x $\frac{\$0.0648}{1{,}000 \text{ gal.}}$ 26,246

Municipal Primary Treatment

405,025,470 x $\frac{\$0.0220}{1{,}000 \text{ gal.}}$ 8,911

Joint Costs

Flow 405,025,470 gal. x $\frac{\$0.0460}{1{,}000 \text{ gal.}}$ 18,631

BOD 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 250 ppm x $\frac{\$18.41}{1{,}000 \text{ gal.}}$ 15,547

SS 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 290 ppm x $\frac{\$18.31}{1{,}000 \text{ gal.}}$ 17,936

NH_3 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x 19 ppm x $\frac{\$179.56}{1{,}000 \text{ gal.}}$ 11,524

Surcharge Credits

BOD 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x (250 -150)ppm x $\frac{\$18.41}{1,000 \text{ lb.}}$ $ (6,219)

SS 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x (290 -45)ppm x $\frac{\$18.31}{1,000 \text{ lb.}}$ (15,153)

NH_3 405,025,470 gal. x $\frac{8.34 \text{ lb.}}{\text{gal.}}$ x (19 -1)ppm x $\frac{\$179.56}{1,000 \text{ lb.}}$ (10,918)

Surcharge Credit Cost Allocation

$\frac{1,533,026 \text{ m}^3}{35,423,260 \text{ m}^3}$ x $234,378 10,143

I/I (Based on Allied Total Customers)

$\frac{1}{32,064}$ x $299,654 9

TOTAL Allied Capital Cost . . . . . $ 89,182

Allied TOTAL Revenue

$377,601 + $89,182 = $466,783

The above calculations follow the methodology that is further demonstrated in the July 1983 Wastewater Rate Study by CH2M HILL. It is my understanding that you have a copy of this study. To give you some background on that study, I am enclosing a copy of my February 24, 1984, letter to Jack Brodhagen, which gave a breakdown on how the City of Kalamazoo rates were developed. If you have any questions, please give me a call.

Sincerely,

Orlin K. Loen, P.E.
Director of Public Utilities

nb

enc

CITY OF KALAMAZOO, MICHIGAN

February 21, 1985

Mr. Andrew Watson
Allied Paper Corporation
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Andy:

At our meeting of February 8, 1985, you requested some information on pretreatment credits. You were interested in lab fee calculations, ammonia concentrations in your effluent, and our requirements for operation and control of the station.

The question of operation and control is being studied. The purpose of this correspondence is to answer your other questions.

On a daily basis, BOD_5 and TSS are analyzed. Lab fees are only charged if there is a net credit. In the event that one parameter is surchargable and one is creditable, if the credit (dollar amount) exceeds the surcharge, a net credit exists.

Lab fees currently are thirty-two dollars per day. This amount covers sampling and analysis. The lab fee may be recalculated during 1985.

In order to be eligible for pretreatment credits for ammonia, you must be able to prove ammonia removals in your pretreatment process.

Please let us know if we can be of further assistance.

Sincerely,

Jack A. Wagemaker,
Industrial Services Supervisor

h

c File

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

February 15, 1985

Mrs. Jean Eldred
Industrial Waste Compliance Officer
Water Reclamation Plant
1415 North Harrison
Kalamazoo, Michigan 49007

Dear Jean,

We would like to formally request that Allied Paper receive pre-treatment credits for the waste water discharged to the City treatment plant. In order to receive the credit, we propose that:

1) The City purchase a flow proportional refrigerated wastewater sampler. The purchase price of the sampler be added to Allied's monthly bill when we begin receiving pre-treatment credits.

2) Allied install the sampler in the pumphouse on the South side of the Bryant Clarifier. This is where the flowmeter recorder/totalizer, that the City reads daily, is located. A sketch of the physical layout is attached.

3) Allied and the City agree that the City will be responsible for the operation and calibration of the flowmeter, recorder/totalizer and sampler. The City will keep a log book with calibration data, in the pumphouse. Allied will be responsible for repair work as requested by the City, will verify the calibration, and will change and retain the recorder charts.

4) Allied and the City will split samples.

5) After a suitable period of agreement in analysis of split samples, the City accept our test results for calculation of the credit.

We believe that these proposals will satisfy the requirements of the ordinance and allow us to demonstrate that our analysis can be used for determining the credit. As we discussed, Allied is required to do sampling and testing for BOD and suspended solids for our NPDES discharge permit. In addition, EPA requires that we have a quality assurance program.

- continued -

We presently split samples with the City on a weekly basis. We do daily testing on the flow to the City for our own use in process control.

Thanks for your help and that of Jack Wagemaker in outlining what the pretreatment credit is and how we can become eligible to receive it. We would like to proceed with this as soon as possible, if you have any questions or comments please call me. If the proposal is acceptable, please present it to the Director.

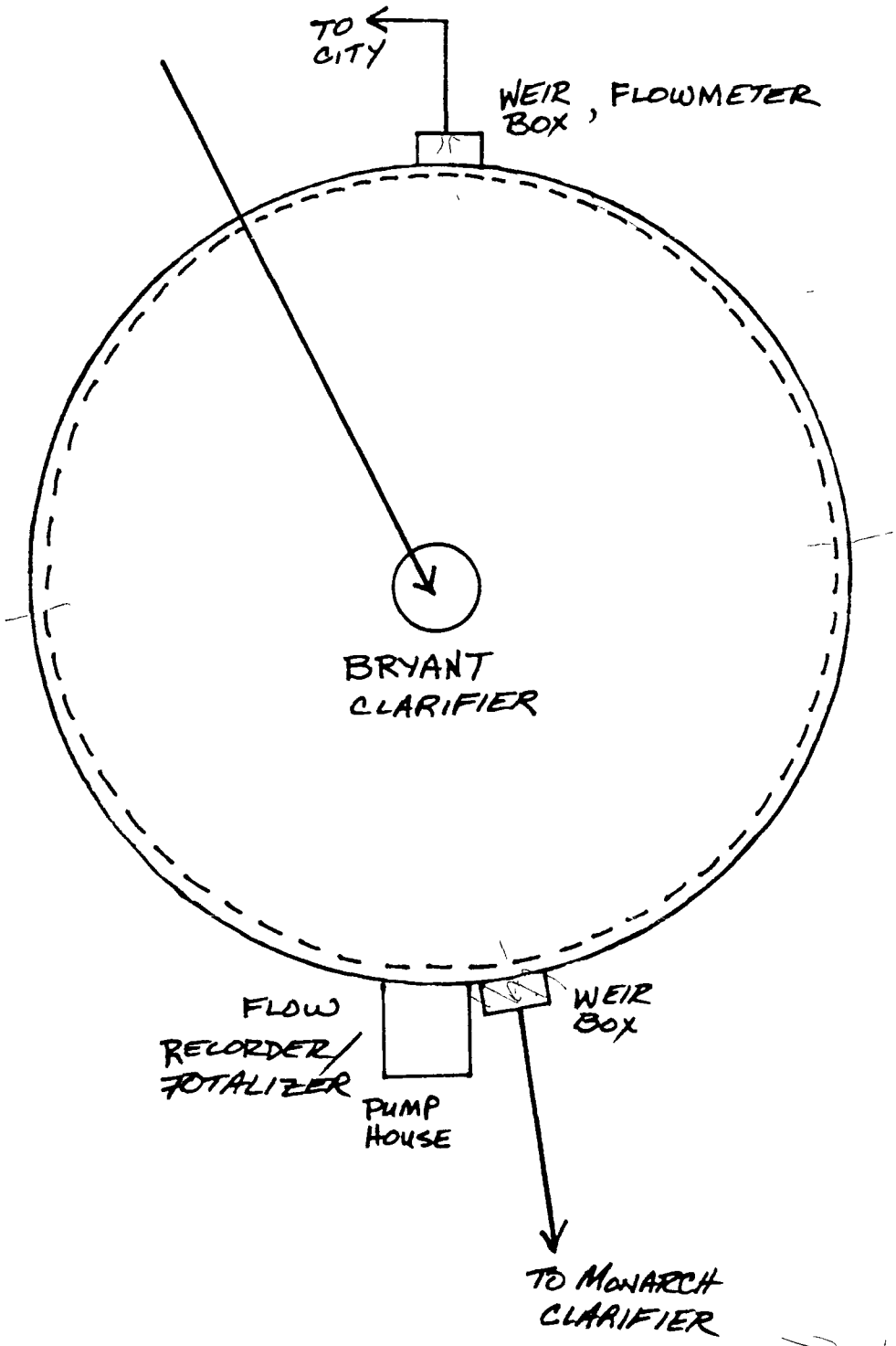
Sincerely yours,

A. W. Watson

A. W. Watson

/kmj

cc: D. Kirk
U. Stoeffler
D. Eaton


TO CITY
WEIR BOX, FLOWMETER
BRYANT CLARIFIER
FLOW RECORDER/ TOTALIZER
PUMP HOUSE
WEIR BOX
TO MONARCH CLARIFIER

→ to P.C.
or

City of Kalamazoo

INTER-OFFICE MEMO

To: Rohel Amundson, Water Quality General Supervisor

From: Jack A. Wagemaker, Industrial Services Supervisor

Date: February 14, 1985

Subject: Allied Paper Company

Based on our meeting with Allied Paper Company personnel on February 8, 1985, regarding contract sampling and removal credits, it is necessary to obtain specifics regarding control of the sampling and flow metering system. Top management should provide us with specifics regarding the following questions so we can go on record with Allied Paper Company.

1. Should we not have authority to lock up access to flow meter and sampling system?

2. Should we not approve Allied personnel entrance for specific necessities?

3. Should we not have control and responsibility of flow meter and sampling mechanism maintenance on our own and/or in coopertion with Allied Paper?

4. Is it not required that Allied Paper installs and owns the required equipment even though we have complete control of the system.

5. Should we not be able to make the final decision on where the required equipment is installed on the effluent system to meet the control requirements?

6. Would the City of Kalamazoo consider paying the cost of equipment and installation and have Allied Paper pay the City back on a monthly basis?

h

c File

City of Kalamazoo

INTER-OFFICE MEMO

To: Orlin Loen, Director of Public Utilities

From: Jack A. Wagemaker, Industrial Services Supervisor

Date: February 13, 1985

Subject: Allied Paper Company

This is to advise you that a meeting was held between Les Stoeffler of Allied Paper Company and Industrial Services personnel on February 8, 1985. Les said he is going to send you a proposal relating to our taking control of their proposed flow meter and sampling operations. The reason, of course, is to get removal credits.

We are verifying the specific control data that will be required of Allied to accept, plus we are getting Allied the technical data they requested, e.g. sample costs, credits, etc.

h

c File

CITY OF KALAMAZOO, MICHIGAN

December 14, 1984

Mr. U.G. Stoeffler
Allied Paper Corporation
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Les:

Attach are the laboratory results for September, October, and November 1984. There is no BOD data for two (2) of the samples due to oxygen depletion.

Sincerely,

Jean Eldred

Jean Eldred,
Industrial Surveillance Technician

h

attach

c File

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Treatment Plant
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-8187

Allied Paper Lab Data

Date	TSS mg/l	BOD mg/l
9/7/84	5	--
9/13/84	18	186
9/20/84	24	85
9/27/84	124	180
10/4/84	148	230
10/11/84	64	310
10/18/84	52	99
10/25/84	107	150
11/1/84	210	138
11/15/84	116	--
11/26/84	104	83
11/29/84	98	144

City of Kalamazoo
Inter-Office
MEMO

To Bruce Minsley, Deputy Director of Public Utilities Date 10-9-84

From Jack A. Wagemaker, Industrial Services Supervisor

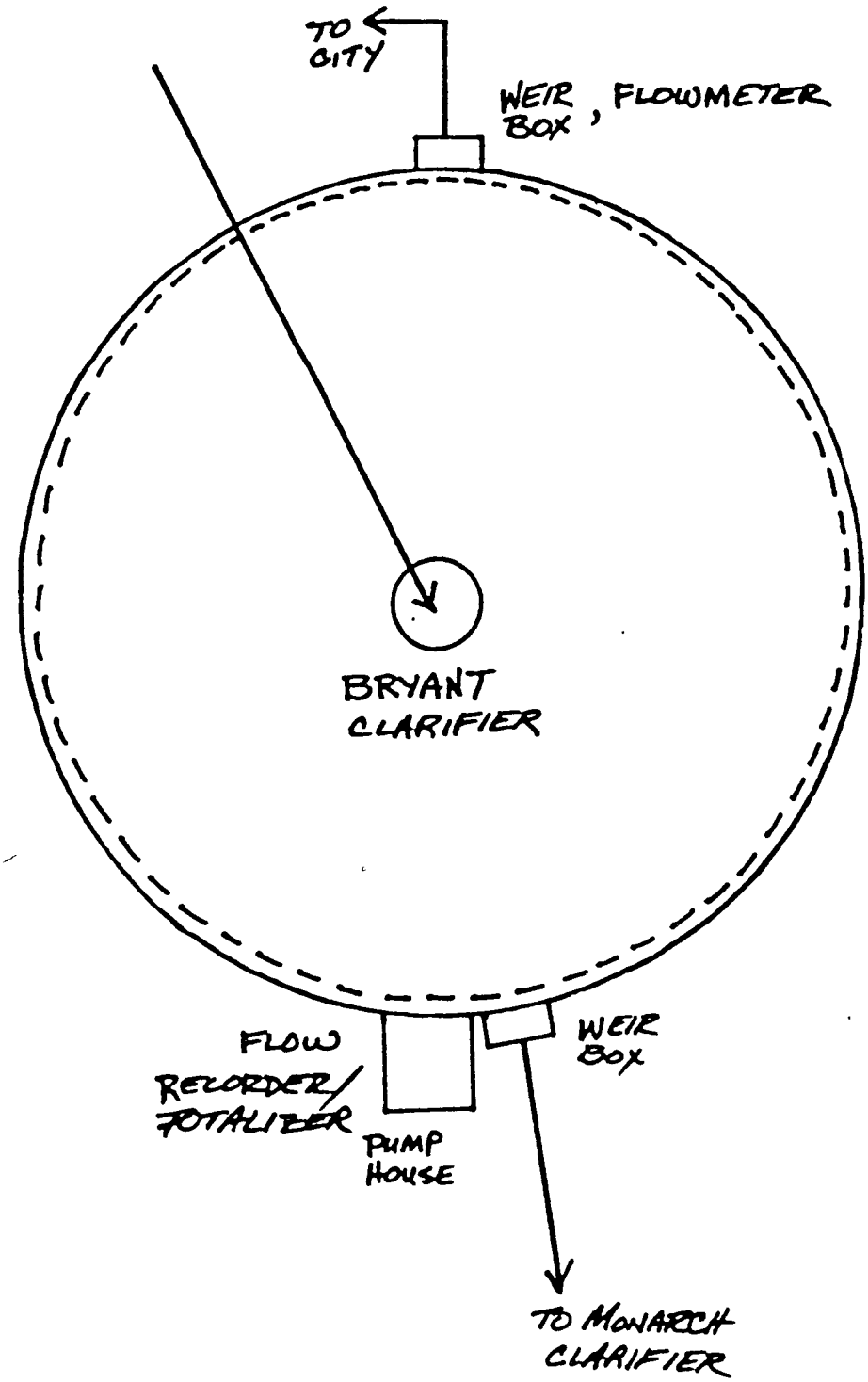
Regarding Allied Paper Company - Sanitary Sewer Flow from Bryant Mill Area

We have investigated the sanitary sewer charge records from every water meter at the above account.

There are a total of seven (7) water meters at the Bryant Mill area bordered by Alcott, Portage and Bryant Streets and Portage Creek. With the exception of one (1) water meter that showed a flow of $11m^3$ in September 1984, all other meter flows show sanitary sewer charges. The flow for these six (6) meters would average 139,791 gallons/day based on a thirty day average. This would account for a high estimated flow into the sanitary sewer along Portage Creek.

h

c R. Amundson
File


TO CITY
WEIR BOX, FLOWMETER
BRYANT CLARIFIER
FLOW RECORDER/ TOTALIZER
PUMP HOUSE
WEIR BOX
TO MONARCH CLARIFIER

CITY OF KALAMAZOO
Public Utilities
Wastewater
345 3157

TO
Lee Steffler, Allied
2030 Portage St.
Kalamazoo MI 49001

DATE 9-27-84
SUBJECT Aug. lab results

MESSAGE

date	TSS mg/l	BOD mg/l
8-2-84	70	108
8-9-84	44	189
8-16-84	28	243
8-23-84	36	147

REPLY

Jean Eldred

FORM NO P-140

City of Kalamazoo
Inter-Office
MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 9-20-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper - Removal Credits Qualifications

At the present time, we do not have any control over the BOD_5 and TSS sampling at the above account. Weekly they bring a sample in for verification. Based on these analyses, there are no surcharges at Allied Paper Company. There is apparently no charge to Allied Paper for sampling either. The data is just filed. This practice has been going on for over 15 years.

Earlier this year, Les Stoeffler requested a meeting with Richard G. Simms and myself regarding removal credits. Mr. Stoeffler, his supervisor and we discussed the qualifications for receiving removal credits. The qualifications are not being met at this account currently.

The requirements are as follows:

> The City of Kalamazoo, Public Utility must have complete control over the sampling facilities and the flow meter facilities. It is the responsibility of the City of Kalamazoo, Public Utility to maintain and verify accuracy of all sampling and flow metering equipment. In most cases, we also pay the Utility bills generated by use of the total facility. The customer has accessibility to the facility and may obtain split samples any time it is requested by them.

At the present time, we are not allowed to obtain samples at their facility due to their concern that their computer is in the building. We agree that we do not want responsibility for possible computer damage. The BOD_5 samples they run are not run according to "Standard Methods" since they do not refrigerate their samples. Currently we read their flow meter and bill them accordingly.

As per results of a typical month's flows, BOD_5 and TSS data, they would have some removal credits coming, but I would not recommend we accept the figures from Allied Paper unless we have access and control of the system. Not only would we be unable to verify data to governing units (EPA and DNR), but it could cause some ill feelings amongst other customers or at least a desire on our customers part for more control of their sampling basis.

h

c File

City of Kalamazoo
Inter-Office
MEMO

To Rohel Amundson, Water Quality General Supervisor Date 10-1-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Company Removal Credit Report Dated 9-18-84

Please correct the dollar figure of $7228.24 in removal credits for the above account based on July and August 1984 data. We found there was about a 5% error on our daily flow figures. This should be reduced by $362.00 to make it $6866.24.

h

c file

City of Kalamazoo
Inter-Office
MEMO

To Bruce Minsley, Deputy Director of Public Utilities Date 10-9-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Company - Sanitary Sewer Flow from Bryant Mill Area

We have investigated the sanitary sewer charge records from every water meter at the above account.

There are a total of seven (7) water meters at the Bryant Mill area bordered by Alcott, Portage and Bryant Streets and Portage Creek. With the exception of one (1) water meter that showed a flow of $11m^3$ in September 1984, all other meter flows show sanitary sewer charges. The flow for these six (6) meters would average 139,791 gallons/day based on a thirty day average. This would account for a high estimated flow into the sanitary sewer along Portage Creek.

h

c R. Amundson ✓
File

City of Kalamazoo
Inter-Office
MEMO

Water Quality

To Rohel Amundson, General Supervisor Date 9-13-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Division of SCM Removal Credits Study

Based on TSS and BOD_5 figures given to us by Les Steffler for the period July 21, 1984 through August 20, 1984, the removal credits earned would be $7,228.24. This using a formula of $0.091/m^3 \times m^3$ for maximum allowable credits as per rate study data.

h

c File

City of Kalamazoo
Inter-Office MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 9-11-84

J Eldred

From Jean Eldred, Industrial Waste Collection Officer

Regarding Allied Sewer Investigation

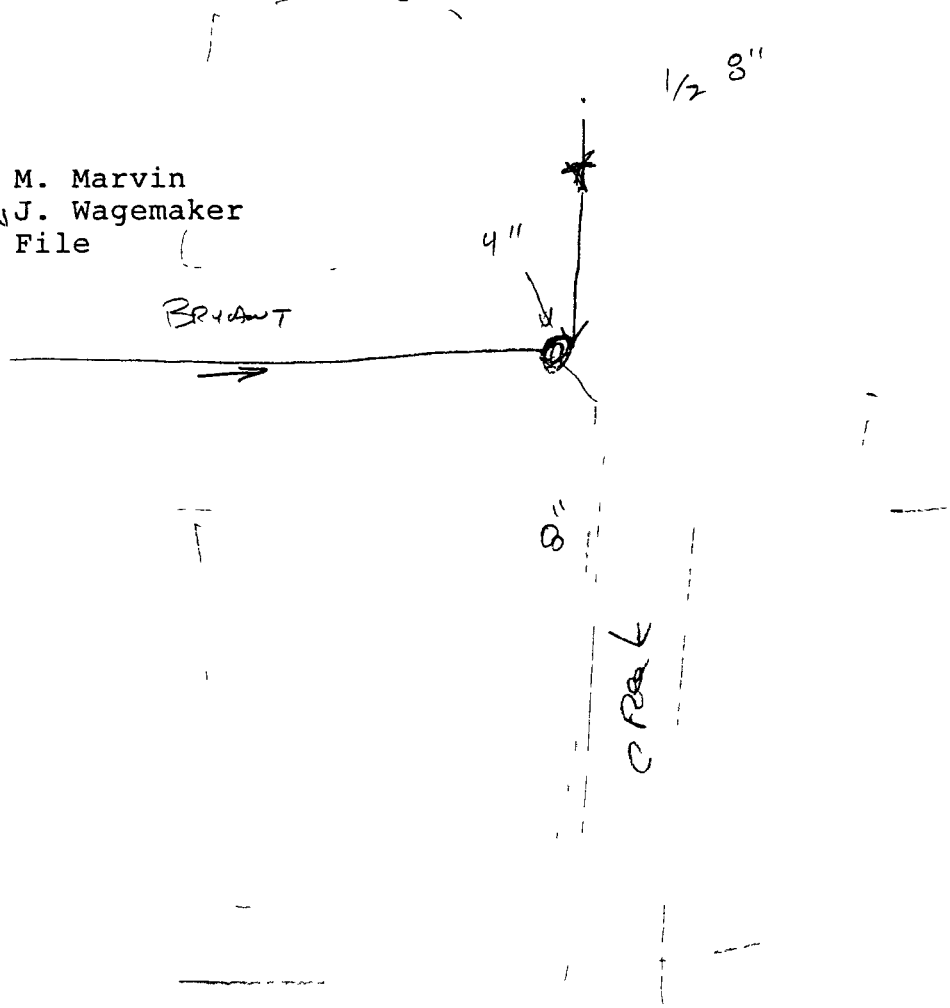
Mike Marvin and I met with Allied personnel on September 10, 1984. We inspected Bryant Mill Plant and Allied sewer maps and obtained the following information:

The Bryant Street sanitary sewer flows into an eight (8) inch sanitary which runs along the east bank of Portage Creek, north to Reed Street and then north along Reed Court. There is a manhole on Allied property, through which the Bryant Street sewer runs just upstream from its discharge into the Portage Creek sewer. This manhole also has two (2) connections from Allied, a four (4) inch inlet from Bryant Garage ~~and an~~ eight (8) inch line which carries sanitary sewage from Mill C. An estimate was made, by a previous field inspection crew, of ¼ million gallons per day flow from the eight (8) inch Allied connection. I believe this estimate was too high. (My estimate would be less than 100,000 gallons per day.)

Allied also has several sanitary connections in the Portage Creek sewer and the Bryant Street sewer.

h

c M. Marvin
J. Wagemaker
File



Allied Paper
10/9/84

Sept. 84
meter readings

	~~400~~	~~E. Cork~~		101 m^3
3455.36 yr	470	Reed		9119 m^3
small no	2034	Por.		
38.92 yes	2032	Por.		921 m^3
	321	Alcott		11 m^3
975.4 yes Allied yes	600	Bryant	- yes	2550 m^3
273 m^3	402	"	- yes	813 m^3
	208	E. Aldott		2460 m^3

15,874 × 264.2
= 4,193,911 gpm

InterOffice Communique

To

From

Date

____ Your Information
____ Your Comment
____ Take Appropriate Action
____ Please Discuss With Me
____ Prepared For My Signature
____ Reply On My Behalf
____ Read & Pass On
____ Return To File
____ Library

REMARKS

Memo to Bruce Minsley

Where is his letter of inquiry?

P-510

City of Kalamazoo
Inter-Office
MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 9-11-84

From Jean Eldred, Industrial Waste Collection Officer J Eldred

Regarding Allied Sewer Investigation

Mike Marvin and I met with Allied personnel on September 10, 1984. We inspected Bryant Mill Plant and Allied sewer maps and obtained the following information:

The Bryant Street sanitary sewer flows into an eight (8) inch sanitary which runs along the east bank of Portage Creek, north to Reed Street and then north along Reed Court. There is a manhole on Allied property, through which the Bryant Street sewer runs just upstream from its discharge into the Portage Creek sewer. This manhole also has two (2) connections from Allied, a four (4) inch inlet from Bryant Garage and an eight (8) inch line which carries sanitary sewage from Mill C. An estimate was made, by a previous field inspection crew, of ¼ million gallons per day flow from the eight (8) inch Allied connection. I believe this estimate was too high. (My estimate would be less than 100,000 gallons per day.)

Allied also has several sanitary connections in the Portage Creek sewer and the Bryant Street sewer.

h

c M. Marvin
J. Wagemaker
File

City of Kalamazoo

INTER-OFFICE MEMO

To: Rohel Amundson, Water Quality General Supervisor
Jack A. Wagemaker, Industrial Services Supervisor

From: Richard G. Simms, General Superintendent R.G.S.

Date: August 27, 1984

Subject: Allied Paper Pretreatment Credit Inquiry

Mr. Les Stoeffler has again inquired as to the requirements Allied must conform to to qualify for pretreatment credit. Would you please develop a statement outlining the requirements for me to include in a letter to Mr. Stoeffler? Also, it might be worthwhile to investigate the magnitude of the credit based upon information we have on their waste for a typical month.

Please forward this information to me as soon as practical.

d

c File

Data given to K. Leanin
wk. 9/10/84
Flows July + August parts
max. allowable Credit
data

FORM 893 REV. 6-15-84

JE

City of Kalamazoo
Inter-Office
MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 9-18-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Division of SCM Removal Credits Study

Based on TSS and BOD_5 figures given to us by Les Steffler for the period July 21, 1984 through August 20, 1984, the removal credits earned would be $7,228.24. This using a formula of $\$0.091/m^3 \times m^3$ for maximum allowable credits as per rate study data.

h

c File

City of Kalamazoo
Inter-Office
MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 9-18-84

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Division of SCM Removal Credits Study

Based on TSS and BOD_5 figures given to us by Les Steffler for the period July 21, 1984 through August 20, 1984, the removal credits earned would be $7,228.24. This using a formula of $\$0.091/m^3 \times m^3$ for maximum allowable credits as per rate study data.

h

c File

City of Kalamazoo
Inter-Office
MEMO

Water Quality
To Rohel Amundson, General Supervisor Date 10-1-84

From Jack A. Wagemaker, Industrial Services Supervisor

Allied Paper Company
Regarding Removal Credit Report Dated 9-18-84

Please correct the dollar figure of $7228.24 in removal credits for the above account based on July and August 1984 data. We found there was about a 5% error on our daily flow figures. This should be reduced by $362.00 to make it $6866.24.

h

c file

Jack

These are MW results on T.S.S & BOD

Les

	TSS	BOD	MG
Jul 1	48	169.5	1.859180
22	26	129.8	1.433190
23	30	145.5	1.554000
24	3	125.3	1.813000
25	10	154.5	0.861000
26	40	195.0	0.928000
27	19	154.5	1.453250
28	20	174.0	1.422970
29	108	147.0	1.165000
30	21	183.0	0.832000
31	22	146.8	1.277000
1	18	133.5	1.703000
2	22	137.3	1.923000
3	34	150.8	1.526590
4	36	145.5	5.616120
5	32	134.8	0.241000
6	46	130.5	2.227000
7	49	138.0	2.916000
8	79.2	199.5	2.421000
9	60	138.5	1.514000
10	45	118.3	1.249360
11	22	103.2	1.006280
12	26	125.5	1.196000
13	21	123.0	1.262000
14	37	219.0	1.410000
15	37	198.0	1.077000
16	50	205.3	0.860330
17	36	262.5	0.717060
18	72	261.0	0.853220
19	~~22~~	~~208.6~~	~~0.734000~~
20	32	243.0	1.310000
21	36	207.0	0.743000
22	74	187.5	0.713000
23			
24	12		
25	45		
26	93		
27	64		

Maximum Credit

$0.35 \times m^3 \times \$0.26/m^3$

$= \$0.091 \times m^3 = \$$ max

City of Kalamazoo

INTER-OFFICE MEMO

Jack

To: Dick Simms and Bernie Gumbis

From: Bruce Minsley, Deputy Utilities Director

Date: 8/17/84

Subject: Extraneous Flows in Portage Creek Sewer

Investigation by the Sewer Maintenance crews have indicated two problems with the sanitary sewer adjacent to the Allied Paper Building along Portage Creek. The sewer maps indicate a manhole connecting the Reed Street sewer and the Portage Creek sewer on Allied property. Our maps do not show a sewer or sewer lead going south from the manhole. The field crews have looked at this situation and have determined that there is some sort of line feeding this manhole, contributing approximately ¼ million gallons per day. Could you please have the Industrial Surveillance group look into this matter with the Allied Corp. and determine the source of this flow?

A question also comes up concerning the condition of the manhole and the position of Portage Creek inflow during high creek levels. I would like Engineering to look into the possible remodeling of these manholes, or if this is not feasible, might we at this time consider entirely relocating this sewer.

I would like to target for us getting together with answers to these questions sometime during the week of September 4th.

nb

c L. Batts

1) ? Location

2) inv ? - sample
- tracing line

8-21-84

located MH on Allied property w/ Marvin
1) does not appear to be 1/4 MED
2) does appear to be a process water. we should get sample, but do we need permission of Allied first since it is on their property?

3) MH is located at Bryant + Portage Creek

4) line may not be TV able because there do not appear to be any MH upstream. (need 2 MH's to TV)

CITY OF KALAMAZOO

TO Ken Leonin
Util. Lab Supt.

DATE 9/13/84

SUBJECT Max credits

James Leven

MESSAGE $73,956 = 0.273
$271,312

0.273 X $0.13/m³ x m³ = max allowable.

REPLY

FORM NO. 614 6-1-64

CITY OF KALAMAZOO

TO Kenneth Leanin
Util. Lab. Supv.

DATE 9/4/84

SUBJECT Allied Paper Co.
Re: RG Simms request

MESSAGE
Attached is a 31+ day data sheet on BODs + TSS from Allied Paper. R.G Simms wants you to determine what the credits would be if we were to accept their figures. Bear in mind that their max. credit would be 0.091 x M^3 daily.

REPLY

FORM NO. 614 6-1-84

CITY OF KALAMAZOO

TO Kenneth Leanin
Util. Lab Supv.

DATE 9/4/84

SUBJECT Maximum Credit that a contr. Ind. acct can receive.

MESSAGE

The code formula in figuring max. credits are as follows:

$$\left(\frac{\text{Cap Cost allocation}}{\text{Total Red Require}} \times \text{Commodity charge} \times m^3 \right)$$

See page 6-24 & 7-5 of W White study, 7/83.

Example: Allied Paper Co.

$$\frac{1,820,141}{5,205,629} = 0.35 \times \$0.26/m^3 \times m^3 = \$ \text{ max allowable for credits}$$

REPLY

Example: Geo-Pacific.

$$\frac{605,508}{1,560,983} = 0.426 \times \$0.16/m^3 \times m^3 = \$ \text{ max allowable credits}$$

Wiggemaker

FORM NO. 614 6-1-84

CITY OF KALAMAZOO
Public Utilities
Wastewater
385-8157

TO
Les Stoeffler, Allied
2030 Portage St.
Kalamazoo MI 49001

DATE 8-9-84
SUBJECT June lab results

MESSAGE

date	TSS mg/l	BOD mg/l
6/7	24	84
6/14	144	210
6/21	36	159
6/28	6	62

REPLY

Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO
Public Utilities
Wastewater
385-8157

TO
Les Stoeffler, Allied
2030 Portage St.
Kalamazoo MI 49001

DATE 8-9-84
SUBJECT July lab results

MESSAGE

date	TSS mg/l	BOD mg/l
7/12	44	129
7/19	26	96
7/26	52	189

REPLY

Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO

Public Utilities
Wastewater
385-8157

TO
Les Stoeffler, Allied
2030 Portage St.
Kalamazoo MI 49001

DATE 5-14-84

SUBJECT April lab data

MESSAGE

date	TSS mg/l	BOD mg/l
4-6-84	44	183
4-13-84	68	117
4-20-84	60	92
4-27-84	48	99

REPLY

Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO

TO
Les Stoeffler, Allied Paper
2030 Portage St.
Kalamazoo MI 49001

DATE 3-13-84
SUBJECT February 1984 lab data

MESSAGE

Date	BOD mg/l	TSS mg/l
2-3-84	117	20
2-10-84	132	20
2-17-84	117	44
2-24-84	60	26

REPLY

Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO

TO
Les Stoeffler, Allied Paper
2030 Portage St.
Kalamazoo MI 49001

DATE 2-6-84
SUBJECT January 1984 lab data

MESSAGE

Date	BOD mg/l	TSS mg/l
1-6-84	78	30
1-13-84	113	18
1-20-84	90	38
1-27-84	42	12

REPLY

Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO

TO
Les Stoeffler, Allied Paper
2030 Portage St.

DATE 12-19-83

SUBJECT Sampler specs.

MESSAGE
Attached are the specs. for the N-Con-Samplers such as the ones we currently use in our sampling stations. If you would like to see one of these in operation, we would be happy to show you.

Sincerely,

REPLY
Jean Eldred

FORM NO. P-140

CITY OF KALAMAZOO, MICHIGAN

December 13, 1983

Mr. U.G. Stoeffler
Allied Paper Corporation
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Les:

Enclosed you will find the laboratory data for the months of January through November 1983. I will send you the December data when it becomes available.

Sincerely,

Jean Eldred

Jean Eldred
Industrial Surveillance Technician

s

c File

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Division
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-8157

Albert sampler dates for [illegible]

	TSS	BOD
1/7/83	124	150 - (210 ~~700~~)
1/14/83	52	165
1/21/83	112	—
1/28/83	108	98
2/4/83	82	123
2/11/83	54	189
2/18/83	72	96
2/25/83	44	117
3/4/83	44	141
3/11/83	28	135
3/18/83	24	126
3/25/83	44	120
4/1/83	no sample	
4/8/83	102	111
[illegible]	82	76
4/22/83	34	75
4/29/83	46	59
5/[illegible]/83	26	110
[illegible]/83	48	104
5/20/83	52	~~338~~ NS
5/27/83	47	107
6/3/83	94	123
6/10/83	44	89
6/17/83	56	69
6/24/83	108	88
7/1/83	80	66
7/8/83	104	60
7/15/83	22	95

date	TSS	BOD
7-22-83	78	123
7-29-83	112	90
8-5-83	56	134
8-12-83	46	91
8-19-83	44	117
8-[illegible]-83	44	[illegible]
9-2-83	10	89
9-9-83	40	89
9-16-83	38	117
9-23-83	40	104
9-30-83	36	86
10-7-83	92	138
10-14-83	18	94
[illegible]-83	54	102
[illegible]-83	8	114
[illegible]-4-83	14	98
[illegible]-11-83	36	138
[illegible]-18-83	64	150
[illegible]-83	no sample	
12-2-83	54	
12-9-83		
12-16-83		
	37.5	110 BOD

CITY OF KALAMAZOO, MICHIGAN

August 8, 1983

Allied Paper Company
Mr. Les Stoeffler
2030 Portage Street
Kalamazoo, Michigan 49001

SUBJECT: Meeting of August 4, 1983, regarding removal credits.

Dear Mr. Stoeffler:

1) Attached is sample contract of latest type approved.

2) Deficiencies :
   a) Refrigeration - 4°c - The EPA will write a lab up for a deficiency if temperature is not controlled.

   b) Unless flow and strength are constant 24 hours/day - a flow proportional system should be available to more accurately measure for removal data.

   c) Availability of entry and sample control to be agreed upon.

3) Sampling and Monitory Systems in our area include:
   a) National Gypsum Company - when in operation (sample daily) (flow measure).
   b) Georgia Pacific Company - sample and flow measure.

   c) James River - Sample and flow measure.

   d) Upjohn Company - sample and flow measure.

Sincerely,

Jack A. Wagemaker,
Industrial Services Supervisor

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Division
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-9157

CITY OF KALAMAZOO, MICHIGAN

July 26, 1983

Mr. Les Stoeffler
Allied Paper Company
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

I have discussed the details of the visit by our staff to your wastewater monitoring facilities as a first step to determine whether pretreatment credits might be applied.

First of all, I wish to give you the history of pretreatment credits. In our Rate Study of 1978 it is pointed out that we surcharge industries for waste which is above "normal" but do not credit them for reducing their load to less than normal. Our proposal to give a pretreatment credit was submitted to the U.S. EPA in 1979 for approval. The U.S. EPA denied this approach and insisted that it's a subsidy by domestic users. Since we still believe that it is in the best interest of the City to encourage pretreatment of high solids and organic waste, we shifted the credit to the capital portion of our rates and away from the O&M portion which is regulated by the U.S. EPA. Since this has been in effect, two industries have qualified for participation. Those industries are the James River Corporation and Georgia Pacific. You should also note that we have been criticized by our municipal contract customers for this credit provision.

To summarize, this is a controversial area which must be handled accurately and carefully or the affected industry will lose the benefit which has been provided within the existing rate structure. With the above in mind, it is necessary that sampling and flow measurement facilities be provided in a way which is under the complete control of the City staff to assure that the customer is paying their appropriate share and that credits can be accounted for and are accurate. It appears from our initial review that your existing system may need to be modified to provide these assurances. I suggest that a meeting be arranged with City personnel and your staff and we will see if a mutual arrangement can be developed. Please note that it is our clear intent that this credit be given where due, but also that we not be put in a position of defending a credit system which is not under our control.

Please let me know when you would be available to discuss this matter.

Sincerely,

R. G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent
d
c J. Wagemaker
O. Loen
File

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Division
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-8157

City of Kalamazoo
Inter-Office
MEMO

To Orlin Loen, Director of Public Utilities Date 7/20/83

From Jack A. Wagemaker, Industrial Services Supervisor

Regarding Allied Paper Company - Pretreatment Credits

Mr. Les Stoeffler of the subject company has made inquiry into getting pretreatment credits due to the fact that this company has a pretreatment (removal) process. In essence he would qualify for credits.

The basis of the credits are the following according to Wastewater Ordinance #1190 Amendment of October, 1982: "Industry must provide at it's own expense suitable wastewater metering and continuous sampling facilities which meet approval of the Director. Any gathering or laboratory analysis required for billing purpose shall be paid for by the industrial user."

According to Richard Simms, Wastewater Superintendent, the City of Kalamazoo should have complete control of the sampling operation and the samples. At the present time, we make a weekly spot analysis from a sample brought in by Allied personnel and no control over the daily sampling or the sampling system is in our hands.

Dan Starkey, Jean Eldred, and myself were invited by Mr. Stoeffler to look over their facilities on July 18, 1983. Their sampling system is in their computer room and they would refuse to give us access to those facilities. Mr. Stoeffler would split samples with us daily but he feels it would be redundant since they have good facilities and techniques. The sample they take for BOD's is not refrigerated as per EPA requirements, but Mr. Stoeffler said they could refrigerate if necessary but he feels the difference between a refrigerated and a non-refrigerated sample is insignificant. The sample is taken on a constant basis regardless of flow. We prefer a flow proportional sample. There is also a backwash system on the sampler that could dilute the 24 hour sample were it turned on by any manner.

I would recommend the situation as it now stands be discussed with Richard Simms when he returns to resolve any problems regarding setting up a pretreatment credit system with Allied Paper Company.

j

c File

CITY OF KALAMAZOO, MICHIGAN

July 12, 1983

Mr. U. G. Stoeffler
Allied Paper Company
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Les:

Attached is an excerpt from the latest revisions to City Ordinance No. 1190. This will replace Section 28-25, part 3.

If you have any questions, please contact us.

Sincerely,

Jean Eldred

Jean Eldred,
Industrial Surveillance Technician

d

attach

c File

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Division
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-8157

(3) Pollutant Loading Charges. Credits

Class of User

(a) Individually Metered Industrial Users and Contract Industrial Users:

$0.152 per kg BOD_5* in excess of 250 mg/l

$0.061 per kg COD * in excess of 625 mg/l

$0.124 per kg SS in excess of 290 mg/l

* Excess oxygen demand shall be charged on the basis of BOD_5 or COD, but not both, with BOD_5 used unless the Director determines that an accurate measure of waste water strength requires the use of COD.

Industries which discharge pretreated wastewater containing compatible pollutants (BOD or SS) at a strength below standard domestic waste may qualify for a pretreatment credit. The pretreatment credit of $0.152/kg BOD and $0.124/kg SS is computed on the difference between standard domestic waste (250 mg/l BOD and 290 mg/l SS) and the concentrations actually discharged by the industry. The pretreatment credit to be granted shall not reduce the industry's ~~commodity~~ capital charge rate to less than $0.013 per cubic meter. The pretreatment credit shall be computed monthly. To qualify for a pretreatment credit, the industry must provide at its own expense suitable wastewater metering and continuous sampling facilities which meet the approval of the Director. Any gathering of samples or laboratory analysis required for billing purposes shall be paid for by the industrial user.

(b) Mastered Metered Non-Industrial Users:

$0.152 per kg BOD_5 in excess of 230 mg/l

$0.124 per kg SS in excess of 260 mg/l."

Section 2. These new rates and charges shall be in effect for bills rendered on or after January 1, 1983.

CERTIFICATE

The foregoing ordinance was adopted by the City Commission of the City of Kalamazoo, Michigan on the _____ day of _____, 1982, and was duly recorded, posted, and authenticated by the Mayor and City Clerk as provided by the Charter of said City.

_____

Caroline R. Ham Mayor

CITY OF KALAMAZOO, MICHIGAN

February 26, 1983

Allied Paper Company
Attention Les Stoeffler, Process Development
2030 Portage Road
Kalamazoo, MI 49001

Dear Mr. Stoeffler:

We have made certified corrections in our records regarding:

1) Table B-4 Fuel Oil (not inorganic acid).
2) Table B-2 Corrected to be listed under oil not 167 inorganic acids. (Noted in our Pretreatment Appendices Tables, December 1982.

According to the final report of our Pretreatment Program submitted to the State of Michigan, Department of Natural Resources for approval, Mercury allowable is "0". The recommendations submitted were made by Greeley & Hansen Consulting Engineers.

Sincerely,

Jack A. Wagemaker,
Industrial Services Supervisor

d

c File

DEPARTMENT OF PUBLIC UTILITIES, Wastewater Division
1415 N. Harrison, Kalamazoo, Michigan 49007 • (616) 385-8157

Jack

These are our results on T.S.S & BOD

	TSS	BOD	
Jul 21	48	169.5	1859180
22	26	129.8	1433190
23	30	145.5	1554000
24	3	125.3	1813000
25	10	154.5	861000
26	40	195.0	928000
27	19	154.5	1453250
28	20	174.0	1422970
29	108	147.0	1165000
30	21	183.0	832000
31	22	146.8	1277000
1	18	133.5	170,3000
2	22	137.3	1923000
3	34	150.8	152,6590
4	36	145.5	5616120
5	32	134.8	241000
6	46	130.5	2227000
7	49	138.0	2916000
8	79.2	199.5	2421000
9	60	138.5	1514000
10	45	118.3	1249360
11	22	103.2	1006280
12	26	125.5	1196000
13	21	123.0	1262000
14	37	219.0	1410000
15	37	198.0	1077000
16	50	205.3	860330
17	36	262.5	717060
18	72	261.0	853220
19	22	208.6	734000
20	32	243.0	1310000
21	36	207.0	743000
22	74	187.5	713000
23			
24	12		
25	45		
26	93		
27	64		

1,946,000
2,175,00
1,971,000
1,940,000
1,831,000

Maximum Credit

$0.35 \times m^3 \times \$0.26/m^3$

$< = 0.091 \times m^3 = \$$ max.

Allied Laboratory Data 1983

Date	TSS mg/l	BOD mg/l	Date	TSS mg/l	BOD mg/l
1/7/83	124	* 150-210 ~~700~~	6/24/83	108	88
1/14/83	52	165	7/1/83	80	66
1/21/83	112	---	7/8/83	104	60
1/28/82	108	98	7/15/83	82	95
2/4/83	82	123	7/22/83	78	123
2/11/83	54	189	7/29/83	112	90
2/18/83	72	96	8/5/83	56	104
2/25/83	44	117	8/12/83	46	91
3/4/83	44	141	8/19/83	44	117
3/11/83	28	135	8/26/83	44	138
3/18/83	24	126	9/2/83	10	89
3/25/83	44	120	9/9/83	40	89
4/1/83	- No Sample -		9/16/83	38	117
4/8/83	102	111	9/23/83	40	104
4/15/83	82	76	9/30/83	36	86
4/22/83	34	75	10/7/83	92	138
4/29/83	46	59	10/14/83	18	94
5/6/83	26	110	10/21/83	54	102
5/13/83	48	104	10/28/83	8	114
5/20/83	52	NS ~~338~~	11/4/83	14	98
5/27/83	47	107	11/11/83	36	138
6/3/83	94	123	11/18/83	64	150
6/10/83	44	89	11/25/83	- No Sample -	
6/17/83	56	69			

* problem with dilution water depletion

February 23, 1983

Mr. U. G. Stoeffer
Process Development
Allied Paper, Inc.
Kalamazoo, Michigan 49003

Dear Mr. Stoeffer:

Enclosed is a copy of a "Report of an Industrial Wastewater Survey" conducted on Allied Paper Company's discharge to the Portage Creek and the Kalamazoo sanitary sewer system on October 25-26, 1982. The report includes the volume of wastewater discharged and results of chemical analyses performed on the composite of the collected effluent. In addition, grab samples were obtained for certain determinations.

The results of the survey indicated that Allied Paper's discharge to Portage Creek from the Monarch clarifier, 390006 (002) met the daily maximum limitations contained in the NPDES permit No. MI0000779 at the time of the survey.

The survey results compared well with the Monthly Operating Report results for all parameters except settleable solids (see Table 3 in the report). Apparently, this is due to a difference in the units of measurement used.

If you have any questions concerning this report, please contact the Surface Water Quality Division at (517) 373-3710.

Sincerely,

John Vollmer

John Vollmer
Surface Water Quality Division

ej

cc: EPA Region V
SWQD Lansing
District File
Kalamazoo WWTP

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE MONITORING SECTION

Report of an
Industrial Wastewater Survey
Conducted at
ALLIED PAPER
All Outfalls No. 390222
NPDES Permit No. MI0000779
Kalamazoo County
Kalamazoo, Michigan
October 25-26, 1982

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, October 25, 1982.

The results of this survey met the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0000779. (Table 3)

The survey results were compared to the plant's Monthly Operating Report (MOP) results. The results compare well except for settleable solids. (Table 3)

One grab sample from outfall 390006 (002) was split for comparison of analytical results. These results also compare well. (Table 4)

The results from this survey are presented along with those of the previous survey conducted in March 1982 in Table 5.

Survey Comments

A small amount of groundwater seepage from the old Monarch Mill area was observed entering the Monarch clarifier inlet. This seepage was sampled and analyzed for organic chemicals. Only trace amounts of chlorinated hydrocarbons were detected. (Table 2)

A 96-hour flow-through bioassay was conducted encompassing the survey period. Results will be forthcoming in a separate report.

Plant Processes

The Allied Paper Corporation produces bible paper, light weight printing papers and other specialty papers at its Bryant Mill in Kalamazoo. The mill operates 5 fourdrinier paper machines and one off-machine coater. The normal production of the mill is approximately 220 tons of product per day and actual production figures are given in the appendix. The mill employs about 390 people and operates 24 hours per day, 7 days per week.

The mill uses bleached kraft pulps manufactured at other locations. Both softwood and hardwood pulps are used. Clay, titanium dioxide and calcium carbonate are used as fillers. Very small amounts of direct dyes are used for tinting some grades of paper. Rosin and alum are used for sizing. On some grades of paper small amounts of melamine formaldehyde is used to improve wet strength. No bleaching is done in the normal process of making paper.

On the coater polymeric synthetic latices and/or natural water soluble polymers are used as binders. Styrene-butadiene, vinyl acetate and acrylics are all used from time to time. Of the five paper machines three have flotation type save-alls and two have disc-type save-alls.

Water Supply, Wastewater & Treatment

Process water used at the Bryant Mill is obtained from the Portage Creek and is chlorinated and passed through sand filters prior to use. Potable water for the mill is obtained from the City of Kalamazoo. Domestic wastes are discharged to the city's sanitary sewer system. Boiler water is softened by a hot lime-soda process.

Process wastewaters from excess white water, coating machine water, filter backwash, softener backwash and boiler blowdown are discharged to the 100 ft. diameter Bryant clarifier. A polymer is added to improve settling. A portion of the Bryant clarifier effluent is discharged to the City of Kalamazoo sanitary sewer system via outfall 390004 (001). The remainder of the Bryant clarifier effluent is discharged to the 90 ft. diameter Monarch clarifier. Flow is automatically apportioned by a computerized system utilizing a total organic carbon analyzer. Some of the Monarch clarifier effluent may be recycled for process water, but this was not being done during this survey. The remaining Monarch clarifier effluent is discharged to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is pumped to drying lagoons on plant property adjacent to the clarifiers.

Survey Procedure

The flows and samples were obtained as follows:

Sampling Location	Flow Measurement	Sampling Methods
390004 (001)	Company totalizer	Automatic air activated sampler, 4 portion grab composite and individual grabs.
390006 (002)	Staff installed water level recorder on a company 36" rectangular weir.	Automatic air activated sampler, 5 portion grab composite and individual grabs.
Manhole near 002	none	Individual grab.

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.

Extractable organic and sulfide 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.

Allied Paper Corporation - Kalamazoo

Table 1 Analyses of composite samples.

Outfalls		390004 (001)		390006 (002)	
Survey Period	From	10-25-82 @ 1527		10-25-82 @ 1255	
	To	10-26-82 @ 1527		10-26-82 @ 1255	
Computed flow rate[1] (M^3/day)		(6,990)		1,590	
		mg/l	kg/day	mg/l	kg/day
Suspended solids		34	240	25	40
Dissolved solids		580	4,100	600	1,000
Settleable solids		17	--	9	10
COD		140	980	190	300
TOC		53	370	59	94
Cyanide (Total)		< 0.005	--	0.011	0.017
Cyanide (Free)		FCN	--	FCN	--
Sulfide		< 0.02 PA	--	< 0.02 PA	--
BOD_5		84	590	100	200
Nitrite & nitrate nitrogen-N		1.3	9.1	0.64 DM	1.0
Ammonia nitrogen-N		0.12 DS	0.84	0.30 DM	0.48
Kjeldahl nitrogen-N		2.0	14	2.2	3.5
Total phosphorus-P		0.07	0.5	0.06	0.1
Chlorides		48	340	46	73
Alkalinity (as $CaCO_3$)		126	--	113	--
Hardness (as $CaCO_3$)		270	--	280	--
		ug/l		ug/l	
Phenol		4 NB	0.03	4 NB	0.006
Total cadmium (Cd)		< 20	--	< 20	--
Total chromium (Cr)		< 50	--	< 50	--
Total copper (Cu)		< 20	--	< 20	--
Total nickel (Ni)		< 50	--	< 50	--
Total lead (Pb)		< 50	--	< 50	--
Total zinc (Zn)		< 50	--	< 50	--
Total aluminum (Al)		2,800	20	< 1,000	--
Total titanium (Ti)		< 1,000	--	< 1,000	--
Chlorinated Hydrocarbons Scan					
1,2 Dichlorobenzene		1.20	0.0084	0.35	0.00056
B-Chloronapthalene		--	--	1.20	0.0019
Hexachlorobenzene		< 0.1	--	< 0.1	--
Other Chlorinated Hydrocarbons		U (<0.1)	--	U (<0.1)	--
Phenols Scan					
Pentachlorophenol		< 10	--	< 10	--
Other Phenols		U	--	U	--

1 - Flow rates used in the computation of kg/day (obtained from company totalizer).
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Allied Paper Corporation - Kalamazoo

Table 2 Analyses of grab samples.

Date	Time	Temp.[1] °C	pH[1] S.U.	Residual[1] Chlorine mg/l	Susp. solids mg/l	Diss. solids mg/l	Settle. solids mg/l	Diss. oxygen mg/l	COD mg/l	TOC mg/l	Total cyanide mg/l	Free cyanide mg/l
390004 (001)												
10-25-82	2215	20.0	7.3	U	41	570	5	--	150	54	< 0.005	FCN
10-26-82	0745	21.0	7.4	U	19	580	7	--	130	51	< 0.005	FCN
390006 (002)												
10-25-82	2245	20.5	7.1	U	38	590	19	1.3	190	61	0.010	FCN
10-26-82	0830	18.0	7.3	U	24	580	< 4	1.7	150	56	0.008	FCN
Manhole at 002												
10-26-82	0845	16.0	7.7	U	--	--	--	--	--	--	--	--

	Sulfide mg/l	BOD_5 mg/l	Nitrite & nitrate nitrogen mg/l	Ammonia nitrogen mg/l	Kjeldahl nitrogen mg/l	Total phosphorus-P mg/l	Chlorides mg/l	Hardness (as $CaCO_3$) mg/l	Alkalinity (as $CaCO_3$) mg/l
390004 (001)									
10-25-82 2215	< 0.02 PA	80	0.94 DM	0.09 DM	1.8	0.08	46	280	122
10-26-82 0745	< 0.02 PA	76	1.5	< 0.05 DS	1.8	0.05	51	280	125
390006 (002)									
10-25-82 2245	< 0.02 PA	110	0.50 DM	0.05 DM	2.1	0.06	45	280	113
10-26-82 0830	< 0.02 PA	100	0.54 DM	< 0.05 DM	2.0	0.05	46	280	115

	O&G I.R. mg/l	O&G Grav. mg/l	Phenol ug/l	Total cadmium ug/l	Total chromium ug/l	Total copper ug/l	Total nickel ug/l	Total lead ug/l	Total zinc ug/l	Total aluminum ug/l	Total titanium ug/l
390004 (001)											
10-25-82 2215	2	2	4 NB	< 20	< 50	< 20	< 50	< 50	< 50	1,200	< 1,000
10-26-82 0745	1	< 2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000
390006 (002)											
10-25-82 2245	2	2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000
10-26-82 0830	2	< 2	3 NB	< 20	< 50	< 20	< 50	< 50	< 50	< 1,000	< 1,000

1 - Values determined in the field at time of sampling.

Allied Paper Corporation - Kalamazoo

Table 2 (continued)

Date	Time	Purgeable Halocarbon Scan[2]: Chloroform ug/l	1,1,1 Trichloroethane ug/l	Bromodichloromethane ug/l	Trichloroethene ug/l	Other Purgeable Halocarbons ug/l	Purgeable[2] Aromatic Hydrocarbon Scan ug/l	Aromatic Amines ug/l
390004 (001)								
10-25-82	2215	6.00 PS	1.10	1.20	--	U (<1.00)	U (<5.00)	< 100
10-26-82	0745	5.00 PS	1.30	1.10	--	U (<1.00)	U (<5.00)	< 100
390006 (002)								
10-25-82	2245	4.00 PS	--	--	--	U (<1.00)	U (<5.00)	< 100
10-26-82	0830	3.00 PS	--	--	--	U (<1.00)	U (<5.00)	< 100
Manhole at 002								
10-26-82	0845	2.00 PS	1.30	--	1.20	U (<1.00)	U (<5.00)	--

	Chlorinated Hydrocarbon Scan: 1,2 Dichlorobenzene ug/l	B-Chloronapthalene ug/l	Other Chlorinated Hydrocarbons ug/l	Phenols Scan: Pentachlorophenol ug/l	Hexachlorobiphenol ug/l	Other Phenols ug/l
Manhole at 002						
10-26-82 0845	1.20	0.95	U (<0.11)	< 10	< 0.1	U

2 - The recommended maximum laboratory holding time was exceeded before analysis was completed. Because of possible sample changes, the actual level may have been higher than the reported value.

Allied Paper Corporation - Kalamazoo

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	October Monthly Operating Report Monthly Average	October Monthly Operating Report Monthly Maximum	October Monthly Operating Report 10-25-82	October Monthly Operating Report 10-26-82	Survey Results[1]
390006 (002)							
Flow (M^3/day)	--	--	1,850	3,180	1,430	2,010	1,590
Settleable solids (mg/l)	--	--	0.05	0.05	0.05	0.05	9 (19, <4)
Oil & Grease (visual) (mg/l)	No visible film Quantitative analysis not required		0 --	0 --	0 --	0 --	-- (2, <2)
BOD_5 (kg/day)	230	350	207*	269*	160	177	200
Suspended solids (kg/day)	230	350	53*	115*	40	40	40
pH (S.U.)	not <6.5 nor >9.5		--	7.1 min. 6.5	6.9	7.0	(7.1, 7.3)

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205
* - Results reported were determined using data from October 16-31 only, due to a seasonal limit change in effect from October 15 - May 15.

-/-

Table 4 Comparison of the laboratory analytical results obtained by Allied Paper - Kalamazoo and the Environmental Protection Bureau from the split grab sample.

Outfall	390006 (002)	
Sample Time & Date	10-26-82 @ 0830	
	Allied	E.P.B.
Flow[1] (M^3/day)	1,450	1,590
	mg/l	mg/l
BOD_5	108.3	100
Settleable solids	0.05	< 4
Suspended solids	30.0	24

1 - Flow reported corresponds to the 24-hour sampling period.

Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfalls	390004 (001)		390006 (002)	
Survey Date From	3-1-82	10-25-82	3-1-82	10-25-82
To	3-2-82	10-26-82	3-2-82	10-26-32
Flow Rate (M^3/day)	5,710	6,990	1,210	--
	mg/l	mg/l	mg/l	mg/l
Suspended solids	28	34	20	25
Dissolved solids	720	580	740	600
Settleable solids	--	--	4	9
COD	220	140	220	190
TOC	74	53	75	59
BOD_5	130	84	140	100
Nitrite & nitrate nitrogen-N	4.3	1.3	5.0	0.64
Ammonia nitrogen-N	0.90	0.12	0.96	0.30
Kjeldahl nitrogen-N	7.5	2.0	9.5	2.2
Total phosphorus-P	0.13	0.07	0.12	0.06

Table 6 Sample Preservation

Parameter	Preservative
COD/TOC/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4/250 ml (to pH <2).
Cyanide	Dechlorinate if needed with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml). 10 drops 10 N NaOH (to pH ≥12)/250 ml.
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).
Sulfides	10 drops 1M ZnAc/250 ml.
Base-neutral Extractables Purgeable Organics	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).
Acid Extractables	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml). 40 drops H_2SO_4/1000 ml (to pH <2).

Samples preserved as required, cooled to 4°C with chain of custody maintained.

Lab Letter Codes

PS - Possible interference may have affected the accuracy of the lab result.
U - Indicates material was analyzed for but not detected.
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 total cyanide.
PA - High absorbance of the sample reagent blank may have affected the precision of the reported result.
DS - Sample was diluted due to other high values on a multi-channel analytical system.
NB - Analytical method has not been approved for routine use. Due to possible low recovery, the actual level may have been higher than the reported value.
DM - Sample was diluted to reduce possible matrix interference.

Survey by: Martin Rock, Environmental Engineer
Elizabeth Browne, Water Quality Technician
Edward Hamilton, Water Quality Technician

Contact with Management: Les Stoeffler

Laboratory Analyses by: Environmental Protection Bureau Laboratory

Report by: Martin Rock
Elizabeth Browne
Point Source Monitoring Section
Surface Water Quality Division
Environmental Protection Bureau
Michigan Department of Natural Resources

Distribution "A"
MM
12/22/82

FIGURE 1

ALLIED PAPER MILLS
KALAMAZOO

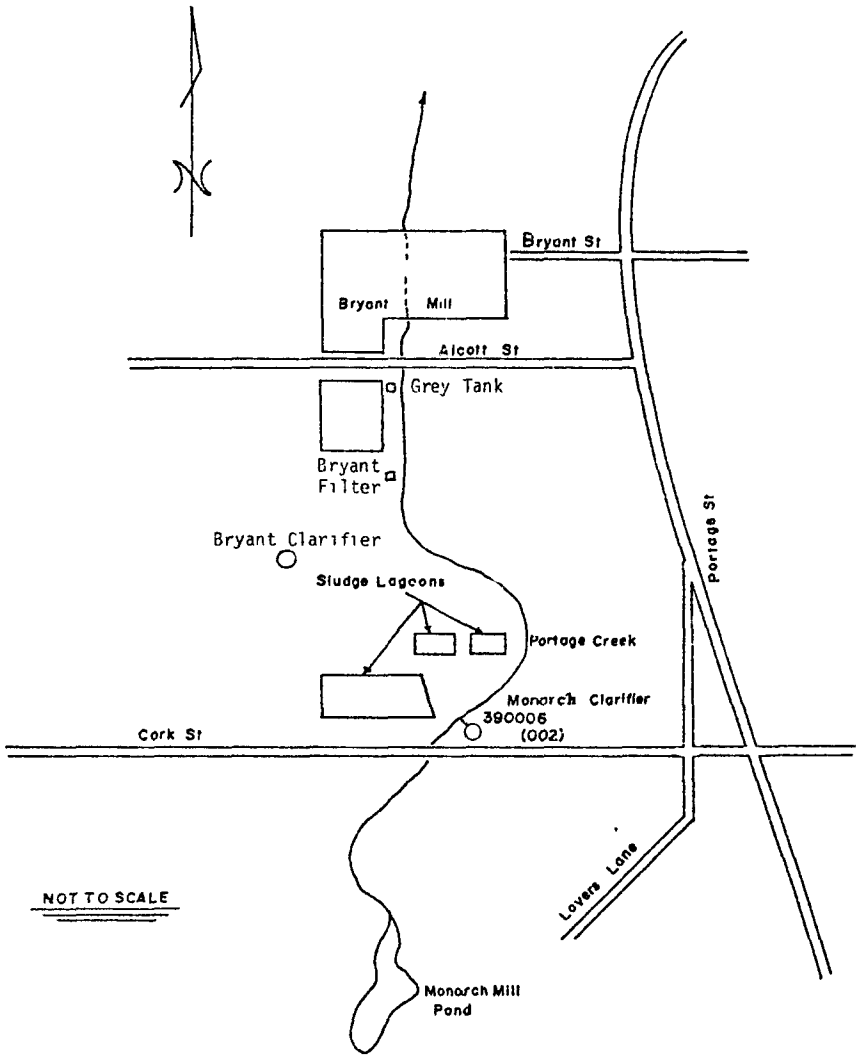
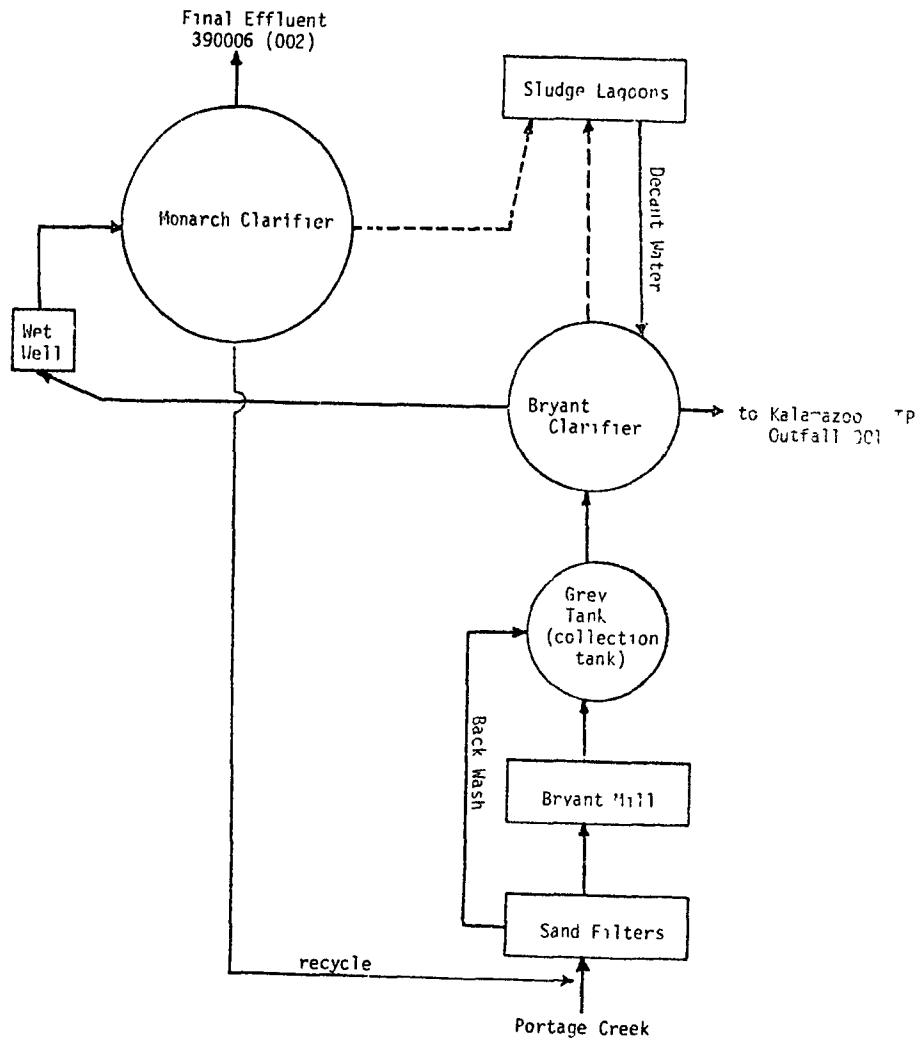


Figure 2 Allied Paper Company - Kalamazoo

Wastewater Treatment



CITY OF KALAMAZOO, MICHIGAN

February 15, 1983

Mr. Les Stoeffler
Allied Paper
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

Enclosed is the final report for the Kalamazoo Wastewater System Industrial Pretreatment Program as prescribed by Greeley and Hansen Consultant Engineers.

This program has been submitted to the Michigan Department of Natural Resources for approval. Following approval, this program is scheduled to be implemented beginning July 1, 1983. The Pretreatment Program is a requirement of our proposed National Pollution Discharge Elimination System (NPDES) Permit as well as federal regulation resulting from the Clean Water Act.

All facets of the Pretreatment Program were studied and pilot plant tests were conducted. This report outlines the recommendations needed to comply. As you will observe, the individual industrial monitoring recommendations and schedules are given in the report but surcharge monitoring is not included. Please review this study and forward your questions to the Wastewater Division of the Department of Public Utilities.

Sincerely,

R. G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

pd
Enclosure
c: File

DEPARTMENT OF PUBLIC WORKS-WASTEWATER DIVISION, 1415 North Harrison, 49007, 616-385-8157

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

November 15, 1982

Dept. of Natural Resources
ATTN: Mr. Roger Przybysz
Water Quality Specialist
State Office Building
350 Ottowa, N. W.
Grand Rapids, Michigan 49503

Dear Mr. Przybysz:

Your letter of September 9, 1982 reporting on the March 1 -2, 1982 survey of Allied Paper's discharge to Portage Creek noted a concentration of 60 micrograms/liter of Pentachlorophenol (PCP) in our 390006 outfall. This was contrasted to a reported result of 0.58 micrograms/liter of PCP in the sample taken in the 1981 survey. Upon discussing this apparent difference in the strength of this parameter you agreed that the previous survey result of 0.58 micrograms/liter was in error and should have been 58 micrograms/liter. This then showed a very little difference in the strength of this parameter in our discharge from one survey to the next.

Since none of our raw materials contain PCP, we were at a loss to explain even this small amount of PCP in our clarifier effluent. Therefore, we had Western Michigan Environmental Services of Holland, Michigan, sample and analyze three water points for PCP, namely Portage Creek (before our discharge), Monarch clarifier effluent, and a spring water near Monarch clarifier pump house. We are pleased to report that a "not detectable" concentration level in all three sample points. The detectable limit being 5 micrograms per liter. A copy of the ESI report is attached.

We trust that these results and the clarification of the 1981 survey results on PCP will negate any recommendation for short-term monitoring of this PCP parameter as a special condition of our current NPDE5 permit reissurance.

Very truly yours,

U. G. Stoeffler
Manager Process Development

UGS/kj
CC: T. E. Flanagan, Allied Vice President
Galen Kilmer, Permit Section, Water Quality Division
Jim Forney, Office of Toxic Materials Control, Environmental Services Div.
John Bohunsky, WQD Files, Lansing
Scott Ross, Compliance Section, Water Quality Division
✓ Jean Eldred, Kalamazoo Wastewater Treatment Plant

Enclosure

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.
146 SOUTH RIVER AVENUE
HOLLAND, MICHIGAN 49423
PHONE 616-396-1209

TO: Allied Paper, Inc.
Paper Mill Division
P.O. Box 2528
Kalamazoo, Michigan 49003

Attn: Les Stoeffler

DATE: November 10, 1982

ANALYSIS of water samples by GC/MS

CERTIFIED BY: William H Bouma (DB)
William H. Bouma, Ph.D., Director of Laboratories

SAMPLING DATE: Received from client November 2, 1982

RESULTS: Expressed as micrograms per liter of sample (ppb)

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
821102-1	Portage Creek	Pentachlorophenol (PCP)	Not Detected*
-2	Effluent	Pentachlorophenol (PCP)	Not Detected*
-3	Spring	Pentachlorophenol (PCP)	Not Detected*

*The limit of detection was 5 micrograms/liter.

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

November 15, 1982

Dept. of Natural Resources
ATTN: Mr. Roger Przybysz
Water Quality Specialist
State Office Building
350 Ottowa, N. W.
Grand Rapids, Michigan 49503

Dear Mr. Przybysz:

Your letter of September 9, 1982 reporting on the March 1 -2, 1982 survey of Allied Paper's discharge to Portage Creek noted a concentration of 60 micrograms/liter of Pentachlorophenol (PCP) in our 390006 outfall. This was contrasted to a reported result of 0.58 micrograms/liter of PCP in the sample taken in the 1981 survey. Upon discussing this apparent difference in the strength of this parameter you agreed that the previous survey result of 0.58 micrograms/liter was in error and should have been 58 micrograms/liter. This then showed a very little difference in the strength of this parameter in our discharge from one survey to the next.

Since none of our raw materials contain PCP, we were at a loss to explain even this small amount of PCP in our clarifier effluent. Therefore, we had Western Michigan Environmental Services of Holland, Michigan, sample and analyze three water points for PCP, namely Portage Creek (before our discharge), Monarch clarifier effluent, and a spring water near Monarch clarifier pump house. We are pleased to report that a "not detectable" concentration level in all three sample points. The detectable limit being 5 micrograms per liter. A copy of the ESI report is attached.

We trust that these results and the clarification of the 1981 survey results on PCP will negate any recommendation for short-term monitoring of this PCP parameter as a special condition of our current NPDES permit reissurance.

Very truly yours,

U. G. Stoeffler
Manager Process Development

UGS/kj
CC: T. E. Flanagan, Allied Vice President
Galen Kilmer, Permit Section, Water Quality Division
Jim Forney, Office of Toxic Materials Control, Environmental Services Div.
John Bohunsky, WQD Files, Lansing
Scott Ross, Compliance Section, Water Quality Division
Jean Eldred, Kalamazoo Wastewater Treatment Plant

Enclosure

WESTERN MICHIGAN
ENVIRONMENTAL SERVICES, INC.
146 SOUTH RIVER AVENUE
HOLLAND, MICHIGAN 49423
PHONE 616-396-1209

TO: Allied Paper, Inc.
Paper Mill Division
P.O. Box 2528
Kalamazoo, Michigan 49003

Attn: Les Stoeffler

DATE: November 10, 1982

ANALYSIS of water samples by GC/MS

CERTIFIED BY: William H Bouma (DB)
William H. Bouma, Ph.D., Director of Laboratories

SAMPLING DATE: Received from client November 2. 1982

RESULTS: Expressed as micrograms per liter of sample (ppb)

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
821102-1	Portage Creek	Pentachlorophenol (PCP)	Not Detected*
-2	Effluent	Pentachlorophenol (PCP)	Not Detected*
-3	Spring	Pentachlorophenol (PCP)	Not Detected*

*The limit of detection was 5 micrograms/liter.

NATURAL RESOURCES COMMISSION
JACOB A HOEFER
E M LAITALA
HILARY F SNELL
PAUL H WENDLER
HARRY H WHITELEY
JOAN L WOLFE
CHARLES G YOUNGLOVE

STATE OF MICHIGAN

WILLIAM G MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A TANNER, Director
State Office Building
350 Ottawa N. W.
Grand Rapids, Michigan 49503
Phone: 456-6232

September 9, 1982

Mr. U.G. Stoeffler, Manager
Process Development
Allied Paper, Inc.
Kalamazoo, MI 49003

Dear Mr. Stoeffler:

Enclosed is a copy of a "Report of an Industrial Wastewater Survey" conducted at Allied Paper Company on March 1-2, 1982. The report includes the volume of wastewater discharged and results of the chemical analyses performed on the composite of the collected effluent. Grab samples were also obtained for certain determinations. In addition, a 48-hour static toxicity screening test was conducted on a portion of the composite sample at Outfall 390006 (002). The results of the tests are found in Appendix A.

The results of the survey indicate that Allied Paper's discharge to Portage Creek from the Monarch clarifier 390006 (002) met the daily maximum limitations contained in N.P.D.E.S. Permit No. MI0000779 at the time of the survey.

The composite sample collected at Outfall 390006 (002) showed a pentachlorophenol concentration of 60 ug/l (Table 1). This value is higher than the survey concentration found in the previous survey. As a result, it will be our recommendation that the current N.P.D.E.S. permit reissuance for the discharge to Portage Creek from the Monarch clarifier contain a special condition requiring short-term monitoring of this parameter to determine if a water quality based effluent limitation needs to be established.

The remainder of the report is self-explanatory. We would appreciate receiving any comments you may have on the survey report at your earliest convenience.

Very truly yours,

WATER QUALITY DIVISION

Roger Przybysz

Roger Przybysz
Water Quality Specialist

RP/mam
CC: Galen Kilmer, Permit Section, Water Quality Division
Jim Forney, Office of Toxic Materials Control, Environmental Services Div.
John Bohunsky/WQD Files, Lansing
Scott Ross, Compliance Section, Water Quality Division
Jean Eldred, Kalamazoo Wastewater Treatment Plant

City of Kalamazoo
Inter-Office
MEMO

To Richard G. Simms, Wastewater Superintendent Date 7-15-82

From Kenneth Leanin, Laboratory Supervisor KL.

Regarding Allied Surcharge

The total figure for surchargeable BOD_5 and Suspended Solids from Allied Corporation for July 2, 1982 and July 3, 1982 is $638.00. The total surcharge figure using Kalamazoo Wastewater Treatment Plant Laboratory Data is $644.00.

Our Lab results for Suspended Solids data were 2.7% lower than Allied's. Our Lab results for BOD's were 15.4% higher than Allied's. The differences almost cancelled each other out so that there was only a net difference of $6.00 for surcharges.

Date	Flow	SS	BOD	SS-$	BOD-$
7-2-82	.953	645	198	$108.00	$ - 0 -
7-3-82	1.351	1,430	338	409.00	46.00

Surcharge Total	$ 644.00
Total for Flow @ #.13/m^3	$1,134.00
Grand Total	$1,778.00

KL:pd
cc: File

City of Kalamazoo
Inter-Office
MEMO

To LISTED OPERATIONS PERSONNEL Date 6-17-82

From Charles E. Powers, Assistant Wastewater Superintendent CEP

Regarding Allied Shutdown

R. Kingsbury
C. LaDuke
B. Slack
R. DeMink
J. Cofield
B. Tanner
R. Fender

Over the 4th of July weekend, Allied Paper will be repairing their clarifier. This repair job will take four days. Allied plans on sending their waste full strength on Friday, July 2nd and Saturday, July 3rd. On Sunday and Monday the mill will be down. The primary sludge pumps should be put on hand on the 10-6 shift Thursday night, July 1st.

CEP:pd
cc: File

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 34[illegible] 7131

April 21, 1982

Mr. Roger Przybysz, Water Control Specialist
Department of Natural Resources
350 Ottawa Ave., N.W.
Grand Rapids, MI 49502

Dear Roger:

This letter will cover the description of two incidents which occurred in our waste treatment system on April 14 and April 15, respectively, as per your telephone request.

On April 14 at 11:25 a.m. I left word with your office that we would be forced to send a small amount of our paper mill waste to Portage Creek at our Mill D sump pumping station due to an electrical repair. We had to replace the circuit breaker for one of the three pumps in this sump. The nature of this electrical repair necessitated cutting all the power to this sump to insure the safety of the personnel. The pumps were down for a period of 46 minutes and since this is only a portion of our discharge, the flow for this period was calculated at 23,300 gallons.

As to the April 15 incident, there are several differences between what was reported to you and the facts we can put together from our records. You reported that the Portage Creek was "colored white" from approximately 2:00 p.m. to after 4:00 p.m. and samples were taken. We replaced a pump at the Monarch clarifier in the afternoon of April 15 causing a surge in the flow of clarifier effluent to Portage Creek. As per our flow chart, the flow increased from the 300 to 400 gpm range (from 10:45 a.m. to 12:45 p.m.) to 750-950 range during the period 12:45 p.m. to 2:07 p.m., returning to the 400 gpm flow rate until 4:05 p.m. All during the period from 9:15 a.m. to 4:05 p.m. the computer readout shows steady turbidity readings. In addition to this data, John Roth took turbidity readings of the Portage Creek water at Alcott Street, Reed Street, Vine Street and Pitcher Street during the time period 3:35 p.m. and 4:10 p.m. in connection with his regular weekly Portage Creek and Kalamazoo River survey. These readings varied from 40-50 JTU (at Pitcher St.) which

can hardly be classified as "colored white". To prove this point, we have added small amounts of milk, 5, 10 and 20 drops, to a liter of city water resulting in turbidities of 22.5, 45 and 90 JTU's respectively. Incidentally at all times we were within our NPDES Permit and limitations.

I hope this clears up the incidents

Very truly yours.

U. G. Stoeffler
Manager, Process Development

xc Jack Wagenmaker - Kalamazoo

br

STATE OF MICHIGAN TRANSMITTAL

TO:

1 Jack Wagemaker

2 Dept of Public Work - Wastewater Div.

3 1415 North Harrison ~~49007~~

4 Kalamazoo MI 49007

FOR ACTION AS INDICATED

☐ SIGNATURE	☐ REPLY—MY SIGNATURE	☐ NOTE AND FORWARD
☐ APPROVAL	☐ REPLY—COPY TO ME	☐ NOTE AND FILE
☐ ACTION	☐ PLEASE SUMMARIZE	☐ NOTE AND RETURN
☐ COMMENTS	☐ PLEASE INVESTIGATE	☐ PLEASE PHONE ME
☐ INFORMATION	☐ FORWARDED PER REQUEST	☐ PLEASE SEE ME

REMARKS:

FROM Roger Przybysz

DATE 4/22/82

FORM 10575

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION ALCOTT ST & PORTAGE CR

DATE: 4-15-82 TIME: 2:30pm BY: RC/GH

Collected
Received
Reported 4-26-82 3:30pm BC

SAMPLE SITE: PORTAGE CR. & ALCOTT STREET

METHOD OF SAMPLING: GRAB SAMPLE

DESCRIPTION OF SAMPLE: CLEAR - SOME FLOATING SOLID - SLIGHTY MILKY COLOR

	BACTERIA		BOD - COD		MISCELLANEOUS
	Fecal Coliform	X	BOD 18.0 mg/l	X	pH 8.2
	Coliform		Diss BOD		Chloride
			COD		
			Diss COD		
	Cadmium	X	SS 139 mg/l		All as N or P
	Chromium	✓	VSS 43 mg/l		Ammonia
	Copper		TS		Org. Kieldahl
	Iron		TVS		Nitrate
	Lead		Sett. Solids		Nitrate
	Mercury				Tot. Kieldahl
	Nickel				Total P
	Zinc				Ortho P

SPECIAL

Report results to:

Address:

Phone:

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Cork St & Portage Cr.

DATE: 9-15-82 TIME: 2:30pm BY: RC/GH

Collected
Received
Reported 9/26/82 3:30 PM

SAMPLE SITE:
PORTAGE CR. AT CORK ST.

METHOD OF SAMPLING: GRAB SAMPLE

DESCRIPTION OF SAMPLE:
CLEAR

	BACTERIA		BOD - COD		MISCELLANEOUS
	Fecal Coliform	X	BOD 7.0 mg/l	X	pH 8.3
	Coliform		Diss BOD		Chloride
			COD		
			Diss COD		
	Cadmium	X	SS 6.4 mg/l		All as N or P
	Chromium	✓	VSS 3.2 mg/l		Ammonia
	Copper		TS		Org. Kieldahl
	Iron		TVS		Nitrate
	Lead		Sett. Solids		Nitrate
	Mercury				Tot. Kieldahl
	Nickel				Total P
	Zinc				Ortho P

SPECIAL

Report results to:
Address:

Phone:

CITY OF KALAMAZOO, MICHIGAN

April 15, 1982

Mr. U. G. Stoeffler, Manager
Process Development
Allied Paper Incorporated
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Mr. Stoeffler:

Please find attached an invoice which represents the costs associated with providing wastewater service to your Company for the month of March, 1982. I have attached two worksheets which provide detail on the cost breakdown.

The first worksheet establishes the flow charges and surcharges associated with the discharge of high strength waste during March. The second worksheet details the costs incurred at the Plant due to the discharge of excessive suspended solids which overloaded the primary treatment system and required extensive maintenance and cleaning by our personnel. For your information, the provisions for extra charges associated with the discharge of prohibited materials or excessive waste are covered under Section 28-25 of the Kalamazoo City Ordinance. In this case we have billed you for the actual cost incurred by the City for the discharge of the excessive solid material.

In addition to the billing discussed above and to verify our conversations in the recent weeks, the Wastewater System is not capable of providing extended service to the paper industries without pretreatment. To keep our policy uniform it will be necessary for Allied Paper to limit untreated discharges to a total of 48 hours in the future. Should it not be possible to limit the discharge of untreated waste to this time period, then it is highly recommended that back-up treatment facilities be implemented at your earliest convenience.

While it is recognized that none of our paper industries wish to be closed down for a period of time due to the inability of the Wastewater System to handle their waste, we cannot allow any user to cause permanent damage to the System and thereby limit our ability to comply with State and Federal regulation.

We hope you appreciate our situation and will provide for a suitable back-up provision should future discharges such as occurred during March be anticipated.

Sincerely,

Richard G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
Attachments
cc: D. Swets
File

COST INCURRED FOLLOWING ALLIED PAPER COMPANY EXCESSIVE DISCHARGES DURING MARCH 1982

DATE	SEWER MAINTENANCE			
3-22	Vactor	- 4 hrs.	@ $50.20/hr.	= $200.80
	Jet #343	- 8 hrs.	@ 18.40/hr.	= 147.20
	Jet #433	- 7½ hrs.	@ 18.40/hr.	= 138.00

Equipment Operator II-George Channels	-	9.25 hrs. @ $7.83/hr.	=	$72.43
Semi-skilled - Robert Glenn	-	4 hrs. @ $7.16/hr.	=	28.64
Equipment Operator II-George Smith	-	8 hrs. @ $7.34/hr.	=	58.72
Foreman - Don Newton	-	4 hrs. @$11.95/hr.	=	47.80
Laborer - Jill Lynch	-	4 hrs. @ $6.77/hr.	=	27.08
Equipment Operator I-Art Theodore	-	4 hrs. @ $7.34/hr.	=	29.36
Laborer-Charles Darling	-	5.25 hrs. @ $7.01/hr.	=	36.80
		Fringe Benefits 30%	=	90.25
		Total for Sewer Maintenance	=	$877.08

DATE	MAINTENANCE			
3-22				
Supervisor-Chuck Tiller	-	14 hrs. @ $11.96/hr.	=	$167.44
Foreman-Art Kollin	-	14 hrs. @ $8.82/hr.	=	123.43
Maintenance Mechanic-Roy Teter	-	14 hrs. @ $8.20/hr.	=	114.80
Maintenance Mechanic-Tom Seiser	-	14 hrs. @ $8.31/hr.	=	116.34
Maintenance Repair-Steve Starr	-	14 hrs. @ $7.24/hr.	=	101.36
Wastewater Operator-Jess Whitley	-	12 hrs. @ $8.50/hr.	=	102.00
Wastewater Operator Apprentice-Ron Janssen	-	12 hrs. @ $6.68/hr.	=	80.16
		Fringe Benefits 30%	=	$241.67
		Total for Plant Maintenance	=	$1,047.25
		Combined Total	=	$1,924.33

4-15-82
R. G. Simms

CITY OF KALAMAZOO

DEPARTMENT OF PUBLIC WORKS
WASTEWATER DIVISION
1415 N. HARRISON STREET
KALAMAZOO, MICHIGAN 49007
PHONE (616) 385-8157

INVOICE № 17916

DATE
April 15, 1982

DEPARTMENT CREDIT REFERENCE
590-000-646.04

Allied Paper Company
2030 Portage Road
Kalamazoo, Michigan 49003

TERMS: NET

PLEASE FOLLOW THESE INSTRUCTIONS

1. MAKE CHECK PAYABLE TO CITY TREASURER.
2. MAIL TO CITY HALL AT BELOW ADDRESS.
3. PLEASE RETURN A COPY WITH REMITTANCE.

YOUR PURCHASE ORDER NUMBER

Industrial Billing for March, 1982		
Demand Charge (flate rate)	$ 100.00	
Commodity Charge (flow)	11,636.00	(1)
Surcharges: BOD*	1,039.00	(2)
TSS*	9,059.00	(2)
	$21,834.00	
(1) See attached worksheet		
(2) Cost incurred as per attached worksheet	1,924.33	
		$23,758.33

THE CITY OF KALAMAZOO, 241 WEST SOUTH STREET, KALAMAZOO, MICH. 49007

INVOICE

A-140 REV. 7/81

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

April 6, 1982

Mr. Richard Simms, Superintendent
Kalamazoo Sewage Treatment Plant
1415 N. Harrison St.
Kalamazoo, Michigan 49007

Dear Dick:

We have completed all the testing, flow measurements and cost calculations of the flow of our untreated waste water to the City during the period of March 7 to March 28. The March 29 flow was read because the meter was not calibrated. The enclosed table shows the complete results including the flow measurements and flow costs, suspended solids determination and surcharge costs, and BOD determination and surcharge costs. The total cost for this period, as we have calculated it is $21,301.

Since we split samples with your laboratory we would be interested in seeing your suspended solids and BOD results on the daily samples. We trust the results are similar.

Allied Paper, and myself personally, thank you and the Treatment Plant for taking all our waste flow during this period when our Bryant clarifier was out of service due to a broken drive gear. We regret the heavy loading of suspended solids of the March 21 flow and have taken all steps necessary that these conditions do not happen again in any situation.

Best personal regards.

Very truly yours,

U. G. Stoeffler
Manager, Process Development

br
attachment

CITY SEWER COSTS - ALLIED RESULTS

Date	Flow (MGD)	Susp.Sol. (mg/l)	BOD_5 (mg/l)	Flow Cost	Susp.Sol. Cost	BOD_5 Cost	Total Cost
3/7*	0.300	-	-	$ 148	$ -	$ -	$ 148
3/7**	0.700	1,842	361	344	345	30	719
3/8	0.948	1,004	218	466	215	0	681
3/9	0.638	1,042	203	314	153	0	467
3/10	0.774	1,436	405	381	282	47	710
3/11	1.004	2,136	464	494	589	84	1,167
3/12	1.309	1,392	373	644	459	63	1,166
3/13	1.261	1,462	372	620	470	60	1,150
3/14	1.000	810	299	492	165	19	676
3/15	0.793	1,862	411	390	396	50	836
3/16	0.955	800	195	470	155	0	625
3/17	0.997	1,500	410	491	384	62	937
3/18	1.007	1,798	465	495	483	84	1,062
3/19	1.095	1,652	378	539	474	55	1,068
3/20	1.517	644	215	746	171	0	917
3/21	1.374	3,648	525	676	1,467	147	2,290
3/22	1.791	1,170	300	881	501	35	1,417
3/23	1.254	1,194	380	617	360	64	1,041
3/24	0.890	966	333	438	191	29	658
3/25	0.974	1,444	320	479	357	27	863
3/26	0.929	2,286	428	457	590	64	1,111
3/27	0.897	1,446	320	441	330	24	795
3/28**	0.495	1,668	307	244	172	11	427
3/28*	0.189	-	-	93	-	-	93
3/29*	0.561	-	-	276	-	-	276
TOTAL	23.652	33,202	7,682	$11,637	$8,709	$955	$21,301

* Treated Effluent
** Untreated Influent

CITY OF KALAMAZOO, MICHIGAN

March 15, 1982

Allied Paper Company
Mr. Less Stoeffler
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

As a follow-up to our letter of March 9, 1982, we have received additional copies of the report on Wastewater Rate Methodology. I am enclosing a copy of this report in order that you might have an opportunity to review it, should you so desire, prior to the 9:00 a.m. March 17 presentation in Room H of the Kalamazoo Hilton. We look forward to your input at Wednesday's meeting.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS/ld
cc: File (1)

Encl.

CITY OF KALAMAZOO, MICHIGAN

March 9, 1982

Allied Paper Company
Les Stoeffler
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

The City of Kalamazoo retained the services of CH_2M Hill as its consultant in mid 1981 to prepare a wastewater user charge program to meet the system revenue requirements while providing equitable rates to all customers which are now and will be served by the new expanded Treatment Plant. This rate study is being prepared in two phases, with the first phase being the methodology for the allocation of costs as well as distribution of expenses by customer class.

CH_2M Hill has indicated that they have completed Phase #1 of the study and we are scheduled to make a presentation to the Kalamazoo City Commission on Tuesday afternoon, March 16, 1982. We would like the opportunity to review the methodology with our major industrial customers following this meeting with the City Commission.

We invite you to attend a presentation by our consultant of the Wastewater Rate Methodology on March 17, 1982. The meeting and presentation will be made in Room "H" at 9:00 a.m. at the Kalamazoo Hilton. We would appreciate your attendance and initial review of this material, so that we might proceed to Phase #2 of the study which will develop the actual Wastewater Rates on a timely basis.

If you have any questions regarding this meeting, please feel free to contact Richard G. Simms, Wastewater Superintendent or myself.

Sincerely,

Donald H. Swets, P.E.,
Director of Public Works

DHS:pd
cc: File

DEPT. PUBLIC WORKS
CITY OF KALAMAZOO

AUG 5 1981

August 3, 1981

Mr. A. E. Vickery
Engineering Manager
Allied Paper Company
Bryant Mill
P. O. Box 2528
Kalamazoo, Michigan 49003

Re: Pollution Incident Prevention Plan
Allied Paper Company 23313
Bryant Mill Revised
PCB Add.

Dear Mr. Vickery:

We have completed our review of your Pollution Incident Prevention Plan submitted in accordance with Rule R 323.1162 of Part 5 of the Water Resources Commission Administrative Rules: Spillage of Oil and Polluting Materials.

The plan, which we have determined meets the requirements of the Rules, is approved. If the plan has not already been fully implemented, you should not delay placing into effect the required procedures and undertaking the proposed and necessary construction of all facilities to provide adequate loss containment areas and to prevent pollution of the waters of the state as required by law.

We would remind you that any changes in present conditions or operations at your establishment may require modification of the plan with additional construction and should be reported to this office.

You are further required to notify us immediately of any spill and to file within ten days after the incident a report describing the cause and extent of the loss, the material involved and corrective measures taken.

Very truly yours,

WATER QUALITY DIVISION

Robert J. Courchaine
Division Chief

RJC/RWP:amk
CC: Parker
Blakeslee
Municipality

CITY OF KALAMAZOO
Wastewater Treatment - Industrial Surveillance

Acct. —
Sample # 1 + 2
Address Portage Cr.
Date 7/20/81
Time 3:30 (Reed)
3:45 (Alcott)
Company Rep.
Sampler Location
Sample Size & Method 2 samples Alcott & Reed (1 each
Physical Description tooled milkin at Reed.

City Inspector eldred-Ward
pH 7.8 at each
Remarks grab samples taken
Anal/Date
to compare river condition at these 2 places
Recv'd by
Date
Time

7-20-81

$2\frac{30}{PM}$: we received a complaint from a citizen; Portage Creek Wilt.

I checked on it, Allied Paper was discharging their clarifier was down 3-4 hrs. to have a valve repaired

By 4^{00} creek was clearing up.

At Don Suets request, I took a sample at Alcott St. I also took a sample at Reed St. they were analyzed for COD & SS & pH data are inconclusive.

	Alcott $3\frac{45}{PM}$	Reed $3\frac{30}{PM}$
pH	7.8	7.8
COD	7.1 mg/l	6.7 mg/l
SS	18.3 mg/l	21.1 mg/l

KALAMAZOO WASTEWATER TREATMENT

N = 0.0105 C.O.D. DATE OF ANALYSIS 7-21-81

Sample	Low. L. STD	Low. L. BLANK	PORTAGE CR. ALCOTT	PORTAGE CR. REED	Reg. STD	REG BLANK	PORTAGE CR. ALCOTT	PORTAGE CR. REED					
ML Sample	5.0	—	2.5	2.5	5.0	—	2.5	2.5					
ML Finish (Buret)	11.90	19.39	7.28	14.57									
ML Start (Buret)	0.00	11.90	0.00	7.28									
ML Used	11.90	7.49	7.28	7.29									
Blank			7.49	7.49									
Blank ML Used			0.21	0.20									
8000·N·ML Used / ML Sample			7.1	6.7									

NOT RUN DUE TO LOW LEVELS Invoiced 7-21-81 [illegible]

N = (33.6) DATE OF ANALYSIS

Sample													
ML Sample													
ML Finish (Buret)													
ML Start (Buret)													
ML Used													
Blank													
Blank ML Used													
8000·N·ML Used / ML Sample													

N = DATE OF ANALYSIS

Sample													
ML Sample													
ML Finish (Buret)													
ML Start (Buret)													
ML Used													
Blank													
Blank ML Used													
8000·N·ML Used / ML Sample													

7-21-81

Portage Creek

KALAMAZOO SEWAGE TREATMENT WORKS

SUSPENDED SOLIDS ANALYSIS -

E-37 REV 6/1/73

SAMPLE SOURCE	ALCOTT	ALCOTT		REED	REED		
DISH NO.	N2	175 mle		O-8	175 mls		
WT. DISH & SOLIDS	21.2128			22.2314			
WT. DISH	21.2096			22.2277			
MG./L. SOLIDS	18.3 32			21.1 37			
% REDUCTION							
WT. DISH & SOLIDS	21.2128			22.2314			
WT DISH & ASH	21.2118			22.2305			
MG./L. VOL. SOLIDS	5.7 10			5.1 09			
% VOL. SOLIDS	31.15%			24.17%			
pH							

SAMPLE SOURCE							
DISH NO.							
WT. DISH & SOLIDS							
WT. DISH							
MG./L. SOLIDS							
% REDUCTION							
WT. DISH & SOLIDS							
WT. DISH & ASH							
MG./L. VOL. SOLIDS							
% VOL. SOLIDS							
pH							

SAMPLE SOURCE							
DISH NO.							
WT. DISH & SOLIDS							
WT. DISH							
MG./L. SOLIDS							
WT. DISH & SOLIDS							
WT. DISH & ASH							
MG./L. VOL. SOLIDS							
% VOL. SOLIDS							
pH							

ANAL BY: _____ DAY: _____ DATE:

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

350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

May 21, 1981

Mr. Richard Simms, Superintendent
Kalamazoo Wastewater Treatment Plant
1415 N. Harrison St.
Kalamazoo, MI 49003

Dear Mr. Simms:

Enclosed is a copy of a "Report of an Industrial Wastewater Survey" conducted on Allied Paper Company's discharge to Portage Creek from the Monarch clarifier. As part of the survey, samples were also collected of the wastewater discharge to the sanitary sewer system from the Bryant clarifier. The analytical results from the survey are included in the report tables.

This information may be helpful to you in your pretreatment program.

Very truly yours,
WATER QUALITY DIVISION

Roger Przybysz

Roger Przybysz
Water Quality Specialist

RP:bjc
enc.
cc: S. Ross
W.Q.D. Files

MICHIGAN
THE GREAT LAKE STATE

R1026-1 1/79

R. Simms

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

350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

May 21, 1981

Mr. U. G. Stoeffer, Manager
Process Development
Allied Paper, Inc.
Kalamazoo, MI 49003

Dear Mr. Stoeffer:

Enclosed is a copy of a "Report of an Industrial Wastewater Survey" conducted on Allied Paper Company's discharge to Portage Creek and to the Kalamazoo sanitary sewer system on January 26 - 27, 1981. The report includes the volume of wastewater discharged and results of the chemical analyses performed on the composite of the collected effluent. In addition, grab samples were obtained for certain determinations.

The results of the survey indicate that Allied Paper's discharge to Portage Creek from the Monarch clarifier, 390006 (002) met the daily maximum limitations contained in N.P.D.E.S. Permit No. MI 0000779 at the time of the survey. The survey report, however, did identify some items which require your investigation and response. These items are as follows:

1. The composite sample collected at outfall 002 contained 0.58 ug/l of pentachlorophenol (PCP). While this may be considered a low level concentration, an investigation into the possible sources to the wastewater system should be conducted and, when found, eliminated.

2. Table 4 comparison of laboratory and analytical results indicated that the BOD and TOC results did not compare well. Since the survey it is my understanding that you have communicated with our Environmental Protection Bureau laboratory personnel in an attempt to resolve the disparity in sample results. It should be noted, however, that the BOD, TOC ratio for both laboratories did not approach the 1:1 ratio previously established by your laboratory.

As a point of clarification, the survey report narrative indicated that the Bryant clarifier either discharges to the city sanitary sewer system or to the 90 foot circular Monarch clarifier which discharges to Portage Creek (outfall 002). This should read that a portion of the Bryant clarifier is discharged to the Monarch clarifier with the remaining wastewater being discharged to the Kalamazoo sanitary sewer systems identified in the survey tables as outfall 001.

MICHIGAN
THE GREAT LAKE STATE
R1026-1 1/79

Your comments, along with the action taken on the two items addressed in this letter, is requested by June 17, 1981.

Very truly yours,

WATER QUALITY DIVI$ION

Roger Przybysz

Roger Przybysz
Water Quality Specialist

RP:bjc

cc: S. Ross
R. Reznick
R. Simms
WQD Files

ALLIED PAPER COMPANY CHARGES FOR WASTEWATER SERVICE

DATE	FLOW (MGD)	SUSP. SOLIDS MG/L	BOD_5 MG/L	FLOW COST	SUSP. SOLIDS COST	BOD_5 COST	TOTAL COST
3-7*	0.300	. 72	126	$148	$ - 0 -	$ - 0 -	$ 148
3-7**	0.700	2,090	573	344	400	88	832
3-8	0.948	1,040	218	466	226	- 0 -	692
3-9	0.638	900	323	314	124	18	456
3-10	0.774	1,470	417	381	290	50	721
3-11	1,004	1,908	435	494	516	72	1,082
3-12	1,309	1,384	173	644	454	- 0 -	1,098
3-13	1.261	1,352	458	620	425	102	1,147
3-14	1.000	784	233	492	157	- 0 -	649
3-15	0.793	1,980	469	390	425	68	883
3-16	0.955	760	210	470	142	- 0 -	612
3-17	0.997	1,750	334	491	462	33	986
3-18	1.007	1,920	420	495	521	67	1,083
3-19	1.095	1,570	308	539	445	25	1,009
3-20	1.517	708	195	746	201	- 0 -	947
3-21	1.374	3,488	833	676	1,394	312	2,382
3-22	1.791	1,146	330	881	487	56	1,424
3-23	1.254	1,230	240	617	374	- 0 -	991
3-24	0.890	1,016	203	438	205	- 0 -	643
3-25	0.974	1,600	319	479	405	26	910
3-26	0.929	2,820	382	457	749	48	1,254
3-27	0.897	1,610	338	441	376	31	848
3-28**	0.495	2,080	474	244	281	43	568
3-28*	0.189	- 0 -	-0-	93	-0-	-0-	93
3-29*	0.561	- 0 -	-0-	276	-0-	-0-	276
TOTAL	23.652	34,688	8,011	$11,636	$9,059	$1,039	$21,734

*Treated Effluent
** Untreated Effluent

4-15-82
R. G. Simms

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

Report of an
Industrial Wastewater Survey
Conducted at
ALLIED PAPER COMPANY
All Outfalls No. 390222
NPDES Permit No. MI0000779
Kalamazoo County
Kalamazoo, Michigan
January 26-27, 1981

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Monday, January 26, 1981.

The results of this survey met the final limitations in the facility's National Pollutant Discharge Elimination System (NPDES) Permit, No. MI0000779. The survey results are compared to the permit and to the results reported on the facility's Monthly Operating Report in Table 3. Settleable solids and total suspended solids results on the facility's MOR were less than the survey results.

A portion of the composite samples taken at outfalls 390004 (001) and 390006 (002) were split with the facility for comparison of analytical results. TOC survey results found at outfall 390006 (002) were less than the results found by the facility. Suspended solids survey results from the same outfall were greater than the facility's results.

The results from this survey are compared to the results from the previous survey done on June 24, 1980 in Table 5. Flow was much less during this survey than during the last survey. This can be attributed to closing down the Monarch Mill.

Groundwater drainage from the company's landfill area was sampled and the results are in Table 2.

Plant Processes

Allied Paper Corporation now operates one mill in Kalamazoo. This is known as the Bryant Mill. Another mill, known as the Monarch Mill, has been permanently shut down. The Bryant Mill produces bible paper and other specialty papers on five Fourdrinier machines.

Under normal production the mill produces approximately 220 tons of product per day. The mill uses Kraft pulp manufactured at other locations.

The mill employs 389 people and operates 24 hours per day, 7 days per week. Production was considered normal during the survey.

Water, Wastewater & Treatment

Portage Creek supplies the process water. Water used at the Bryant Mill is chlorinated and passed through sand filters prior to its use. Potable water for the mill is obtained from the City of Kalamazoo. Domestic wastes are discharged to the city's sanitary sewer system.

Schematics of the wastewater treatment system and plant configeration are shown in Figure 1 & 2. Wastewater received at the 100-foot circular Bryant clarifier originates from excess white water, filter backwash, and from the lime-soda ash softening process used for boiler feed water. Alum and a polymer are added to improve settling in the Bryant clarifier. The Bryant clarifier effluent is either discharged to the city sanitary sewer system or to the 90-foot circular Monarch clarifier. The company maximizes the loading which can be placed on the Monarch clarifier without exceeding permit limitations for discharging to Portage Creek. Flow is automatically apportioned via a computerized system utilizing a total organic carbon analyzer. Monarch clarifier effluent discharges to Portage Creek via outfall 390006 (002).

Sludge from both clarifiers is disposed of on plant property.

Survey Procedure

The flows and samples were obtained as follows:

Outfall	Flow Measurement	Sampling
390004 (001)	Company-installed totalizer.	5 Aliquot grab composite and individual grabs.
390006 (002)	Company-installed 48" full channel weir; staff-installed water level recorder.	Automatic air-activated sampler and individual grabs.

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.

Extractable organic 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.

Table 1 Analyses of composite samples.

Outfalls		390004 (001)	390006 (002)	
Survey Period	From	1-26-81 - 1315	1-26-81 - 1155	
	To	1-27-81 - 1315	1-27-81 - 1155	
Computed flow rate[1] (M^3/day)		(5,806)	2,500*	
		mg/l	mg/l	kg/day
COD		180	110	280
TOC		58	38	95
Phenol		0.007	0.008	0.02
BOD_5		110	62	160
$CBOD_5$		96	56	140
Nitrite & nitrate nitrogen-N		0.83	0.08	0.2
Ammonia nitrogen-N		< 0.01	< 0.01	--
Kjeldahl nitrogen-N		4.2	4.0	10.
Orthophosphates-P		0.08	0.05	0.1
Total phosphorus-P		0.50	0.33	0.82
Suspended solids		49	47	120
Dissolved solids		640	590	1,500
Settleable solids		< 2	9	20
			ug/l	kg/day
Pentachlorophenol (PCP)		--	0.58	0.0014

1 - Flow rates used in the computation of kg/day
* - 3 significant figures.
To obtain MGD multiply M^3/day by 0.0002642
To obtain lbs/day multiply kg/day by 2.205

Allied Paper Company - Kalamazoo

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	COD mg/l	TOC mg/l	Phenol mg/l	$CBOD_5$ mg/l	BOD_5 mg/l	Nitrite & nitrate nitrogen mg/l	Ammonia nitrogen mg/l
390004 (001)												
1-26-81	1750	6,050	20.5	7.9	U	160	51	0.007	71	80	0.32	< 0.01
1-27-81	0840	14,000	20.0	7.1	U	210	69	0.005	130	140	0.75	0.08
390006 (002)												
1-26-81	1630	2,120	18.0	7.4	U	110	38	0.007	53	60	0.40	< 0.01
1-27-81	0810	2,420	18.5	7.2	U	130	42	0.006	68	71	< 0.01	< 0.01
390222 (Drainage from Landfill)												
1-27-81	0900	--	3.0	7.7	--	15	--	--	1.4	1.9	0.14	0.80

Date	Time	Kjeldahl nitrogen mg/l	Ortho-phosphates-P mg/l	Total phosphorus-P mg/l	Susp. solids mg/l	Diss. solids mg/l	Settle. solids mg/l	O&G I.R. mg/l	O&G Grav. mg/l
390004 (001)									
1-26-81	1750	4.4	0.04	0.94	52	460	12	4	4
1-27-81	0840	3.4	0.05	0.22	50	670	< 2	1	3
390006 (002)									
1-26-81	1630	4.4	0.03	0.32	38	580	3	3	2
1-27-81	0810	3.8	0.05	0.32	34	540	< 2	1	3
390222 (Drainage from Landfill)									
1-27-81	0900	1.2	0.08	0.12	5	540	--	< 1	< 2

1 - Flow at time of grab sampling.
2 - Values determined in the field at time of sampling.

Allied Paper Company - Kalamazoo

Table 3 Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Parameter (Unit)	NPDES Permit Final Limitations		January Monthly Operating Report				Survey Results[1]
	Daily Average	Daily Maximum	Monthly Average	Monthly Maximum	1-26-81	1-27-81	
390006 (002)							
Flow (M^3/day)	--	--	3,560	7,086	2,270	2,060	2,500
Settleable solids (ml/l)	--	--	0.05	0.10	0.05	0.05	--
(mg/l)	--	--	--	--	--	--	9 (3, <2)
Oil & Grease (visual)	No visible film		0	0	0	0	--
(mg/l)	--	--	--	--	--	--	(2, 3)
BOD_5 (kg/day)	230	350	206	349	98.4	148	160
Total susp. solids (kg/day)	230	350	73	170.	50	65.8	120
pH (S.U.)	not <6.5 nor >9.5		--	min. 6.5 max. 7.3	7.0	6.9	(7.4, 7.2)

1 - Survey results are for the composite sample. Grab sample ranges are shown in parentheses ( ).
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 Allied Paper Company and the Environmental Protection Bureau from the split composite samples.

Outfalls	390004 (001)		390006 (002)	
	Allied Paper	E.P.B.	Allied Paper	E.P.B.
Flow (M^3/day)	--	--	2,130	2,500
	mg/l	mg/l	mg/l	mg/l
TOC	44	58	62	38
BOD_5	94.3	110	49.8	62
Settleable solids	0.05[1]	< 2	0.05[1]	9
Suspended solids	44	49	34	47

1 - units are ml/l.

Table 5 Comparison of the previous survey results with the results obtained in this survey.

Outfall	390006 (002)	
Survey Date From	6-24-80	1-26-81
To	6-25-80	1-27-81
Flow Rate (M^3/day)	5,910	2,500
	mg/l	mg/l
Suspended solids	< 2	47
Dissolved solids	460	590
Settleable solids	< 2	9
COD	66	110
TOC	19	38
BOD_5	44	62
$CBOD_5$	37	56
Nitrite & nitrate nitrogen-N	1.0	0.08
Ammonia nitrogen-N	0.06	< 0.01
Kjeldahl nitrogen-N	0.92	4.0
Ortnophosphates-P	< 0.01	0.05
Total phosphorus-P	0.02	0.33

Table 6 Sample Preservation

Parameter	Preservative
COD/TOC/Phenol (Chlorine Absent)	10 drops conc. H_2SO_4/250 ml (to pH <2).
Oil & Grease	10 drops conc. H_2SO_4/250 ml (to pH <2).
Acid & Base-neutral Extractables	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2/250 ml).

All samples cooled to 4°C and preserved upon collection and chain of custody maintained.

Survey by: Ralph Reznick, Environmental Engineer
Edward Hamilton, Water Quality Technician
Kent Mottinger, Water Quality Technician

Contact with Management: Les Stoeffler

Hydrocarbon Analyses by: Environmental Protection Bureau Laboratory

Physical, Chemical & Bacteriological Analyses by: Environmental Protection Bureau Laboratory

Report by: Ralph Reznick
Edward Hamilton
Point Source Studies Section
Environmental Services Division
Environmental Protectic Bureau
Michigan Department of Natural Resources

Distribution "A"
MM
4/6/81

FIGURE. I

ALLIED PAPER MILLS
KALAMAZOO

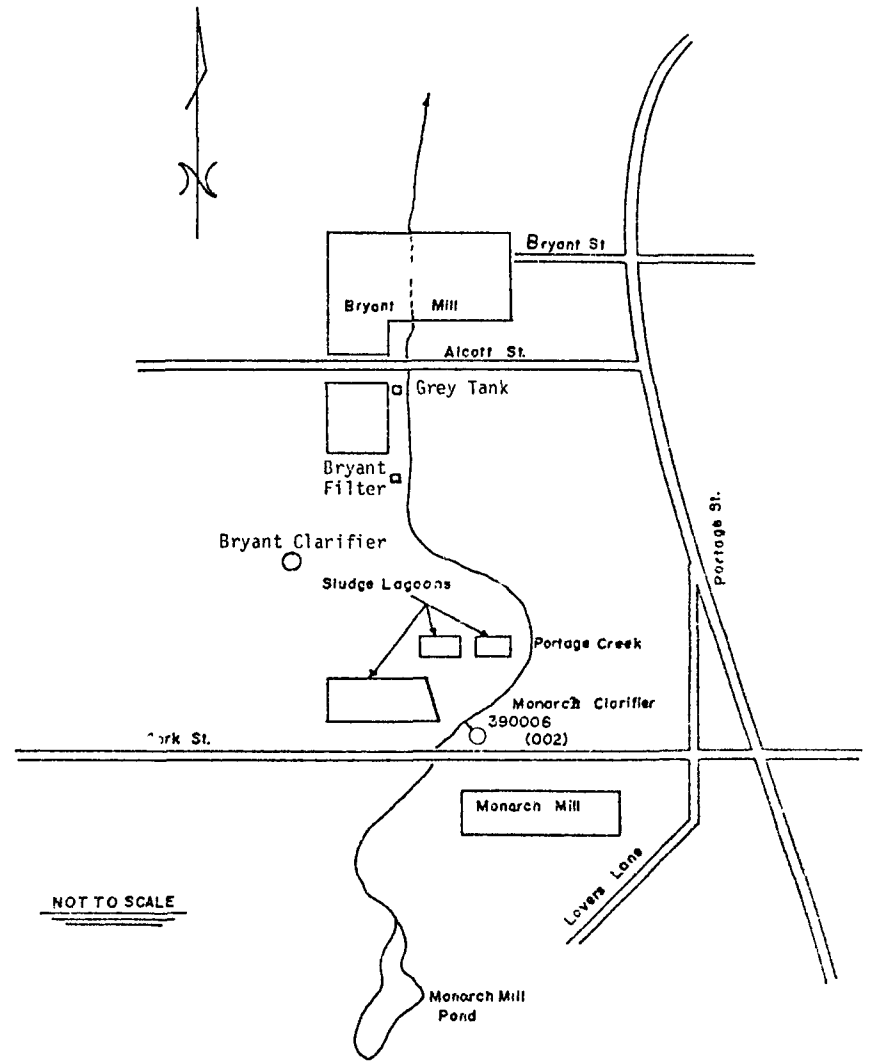
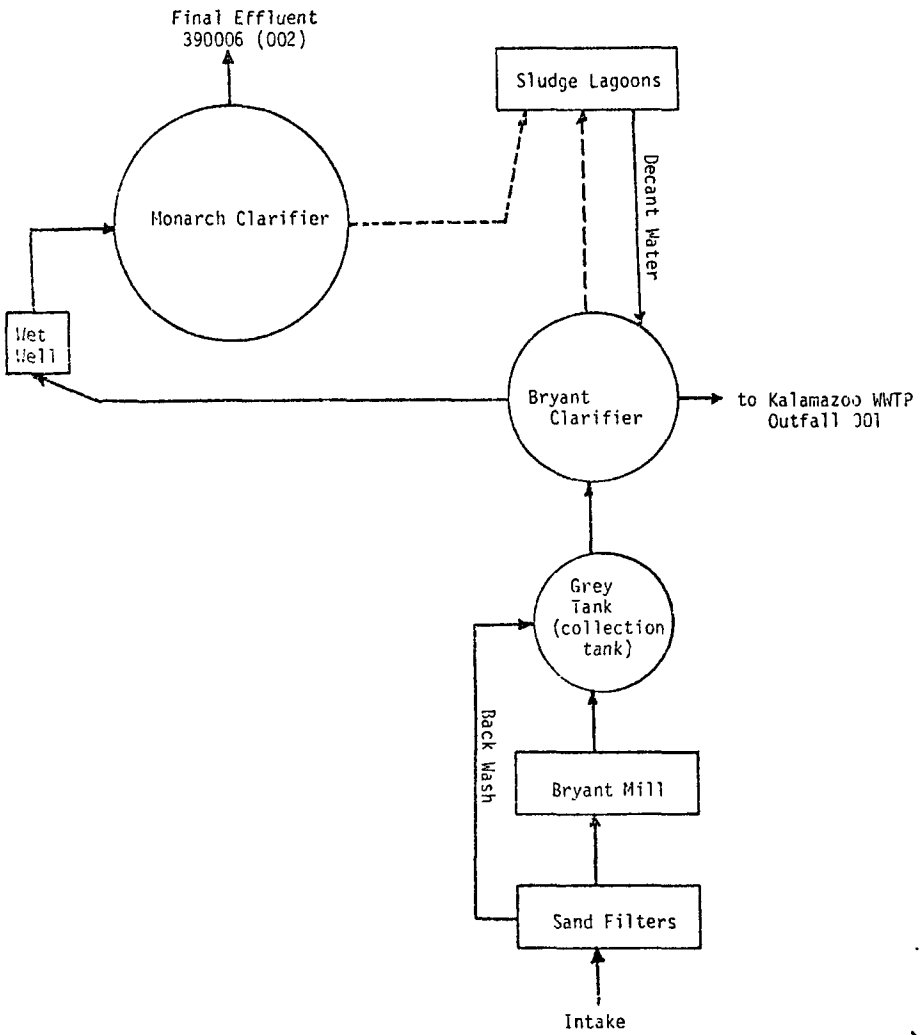


Figure 2 Allied Paper Company - Kalamazoo

Wastewater Treatment



TAX 4/29/81

CITY OF KALAMAZOO, MICHIGAN

May 29, 1980

Mr. Roger Przybysz
Michigan Department of Natural Resources
Water Quality Specialists
2nd Floor
350 Ottawa, N.W.
Grand Rapids, Michigan 49502

Dear Mr. Przybysz:

On May 27, 1980 we received a telephone call at approximately 10:00 a.m. informing us of a milky colored discharge occurring in Portage Creek. The problem was traced to Allied Paper's Monarch mill clarifier.

I spoke with John Roth and Les Stoeffler regarding the discharge. I was told it was due to a start-up problem. Their flow had been reduced due to a strike; yesterday they put the clarifier back into operation. Les told me that he had already spoken with you. He said he explained the problem to you and that you were satisfied. I was also assured that it was necessary for me to get a sample to be analyzed at our laboratory. He felt that you had all of the necessary information.

I was told that the discharge would be of a short duration, lasting only until the system recovered from the flow change.

If you have any questions or required further information, please contact us.

Sincerely,

Jean Eldred

Jean Eldred
Industrial Surveillance Technician

JE:pd
cc: File

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

May 28, 1980

Mr. Richard Simms
Waste Water Superintendent
1415 North Harrison
Kalamazoo, MI 49007

Dear Dick:

I am enclosing the Allied test data on samples collected by us and split with your staff for the period April 21, 1980 to May 4, 1980. You will note the only major differences in results are for the days May 2, 3 and 4. On these days all the Allied Mills were down and we doubt the high BOD values, low pH values and high suspended solids your laboratory recorded for those days.

A grab sample was analyzed for suspended solids using your laboratory's filter paper, a glass fiber Gelman filter, which Allied regularly uses on Monarch effluent samples, and a coarser Schleicher and Schuell #604 filter paper with the following results:

Grab Sample Results, Suspended Solids (mg/l)

City's Filter Paper	- 10.0
Gelman Paper	- 24.0
S & S Paper	- 9.0

The attached test results show the Allied values determined for the S&S paper and Gelman paper on most of the daily samples.

I will be interested in your comments on the comparison of results on these samples for the test period.

Very truly yours,

U. G. Stoeffler
Manager, Process Development

enclosure
br

cc: J.Roth

ALLIED TEST DATA - DAILY COMPOSITE SAMPLES

Date	Suspended Solids mg/l S&S	Suspended Solids mg/l Gelman	BOD mg/l	pH
4/21			59	6.4
4/22			102.5	6.4
4/23	18	48	113	6.6
4/24	9	32	85.5	6.6
4/25	29	28	73	6.7
4/26	26	24	52	6.8
4/27	54	36	63	7.0
4/28	11	44	62.5	6.8
4/29	29	52	59.5	6.7
4/30	20	60	62	6.8
5/1	16	32	71	7.3
5/2	5	24	9.5	7.7
5/3	6	20	5.5	7.7
5/4	7	20	4.9	7.7

Inter-Office

MEMO

City of Kalamazoo

To Oley Loen, Ass't. Dir. of Public Works Date May 29, 1980

From Jack Wagemaker, Wastewater Supervisor II

Regarding Allied Paper Company (Citizen Complaints on Portage Creek Color)

As you are aware in the past we have had several citizen complaints on the whitish color of Portage Creek due to a problem at Allied Paper Company. We get direct calls, referrals from Public Works and, I understand, they complain at the City Commission and other citizen meetings.

We have reacted to these complaints, eg., observation, picking up samples, and/or reporting the problem to the DNR. I have discussed this problem with Roger Przybysz of the DNR and he has seen samples. He either talks to Les Stoeffler or acts unconcerned. In attempting to talk to Les about it he brushes us off and says the DNR already is aware of it.

It is apparent that this problem is related to their cut-off system when discharge from Monarch is ready to be switched to the sanitary sewer system. It lasts about one hour.

Since no one but the citizens are concerned and it is a direct Portage Creek influent from Allied Paper (does not enter City of Kalamazoo storm system), I feel it is a waste of time for Kalamazoo City employees to run out there whenever a complaint is made.

It should be the responsibility of the DNR to advise the citizens concerned or they should make Allied Paper Company correct the situation.

JAW:pd
cc: File

CITY OF KALAMAZOO, MICHIGAN

September 17, 1980

Mr. Les Stoeffler, Manager
Process Development
Allied Paper, Incorporated
2030 Portage Street
Kalamazoo, Michigan 49003

Dear Mr. Stoeffler:

The City of Kalamazoo will be pursuing a pretreatment program in the near future and to assist in developing this program, I would like for Mr. Jack Wagemaker and Ms. Jean Eldred to become familiar with your facility and pretreatment system. I am, therefor, requesting that you contact Mr. Wagemaker at this Office at your convenience to provide a time when your facility can be reviewed and our files can be brought up to date as to your industrial process and pretreatment program.

If you have any questions regarding this letter, please feel free to contact me.

Sincerely,

R. G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
cc: J. Wagemaker
File

DEPARTMENT OF PUBLIC WORKS-WASTEWATER DIVISION, 1415 North Harrison, 49007, 616-385-8157

CITY OF KALAMAZOO, MICHIGAN

July 3, 1980

Mr. Al Vickery
Allied Paper Company
P.O. Box 2528
Kalamazoo, MI 49003

Dear Mr. Vickery:

Attached to this letter of transmittal is a recap of costs accrued in the rebuilding of the twin culverts and appurtenances under Alcott Street at the Portage Creek. The items listed and totals shown are in accordance with amounts agreed upon at our meeting on Wednesday July 2, 1980 with Mr. Don Falvey. The repairs to the fence at the site and further work on the gates is to be borne by the Allied Paper Company and major street improvement costs, at this location, to be the responsibility of the City of Kalamazoo. The street improvements will be held in abeyance, as per your request, until Allied Paper Company has completed contemplated sub surface work in this area.

Please also find enclosed a copy of the billing to the Allied Paper Company, for the amount of $18,506.09 as per your Purchase Order #32385, which reflects a credit of $5,400.00 to Allied for City Gunite costs.

The project was more costly and took longer than planned as the wear and damage was much greater than anticipated when the original estimates were made.

We do appreciate the spirit of cooperation and good will by the Allied Paper Company, to the City of Kalamazoo, in resolving a mutual problem. Both Mr. Donald Swets and Mr. Orlin Loen, as well as the writer, are grateful for this type of relationship between Industry and Local Government.

Very truly yours,

Richard G. Heystek
Sewer Construction Supervisor

RGH:rc
cc: D. Falvey, D. Swets
O. Loen, E. Hassing
W. Nelson, R. Simms
R. Heystek & File
Att.

July 2, 1980

ALCOTT STREET CULVERTS AT ALLIED PAPER MILL

CODE: 202.474.XXX.641

STARTING DATE: 2/26/80

Project Cost: TOTAL		$52,973.15
Accrued City of Kalamazoo Costs (Less Gunite)		
Payroll plus benefits	$27,972.82	
Materials and Supplies	7,513.83	
Equipment Leased (Outside)	983.49	
Equipment Rental (City)	6,843.01	$43,313.15
Allied Paper Company Share	$23,906.09	
City of Kalamazoo Share		
Concrete Foundations, Walls, Floors	$15,151.26	
Replace 18 L.F. of 10" D.I.P. Sanitary Sewer Main	4,255.80	
TOTAL CITY SHARE	$19,407.06	
Total Gunite Job Const.		$ 9,660.00
City of Kalamazoo Share	$ 5,400.00	
Allied Paper Company Share	$ 4,260.00	
Allied Paper Company Share	$23,906.09	
Credit to Allied for Gunite	-5,400.00	
Billing to Allied by City of Kalamazoo	$18,506.09	
City of Kalamazoo Share	$19,407.06	
City of Kalamazoo Gunite Share	5,400.00	
	$24,807.06	
GRAND TOTAL COST		$52,973.15

RECAP:

	CITY FORCES	CONTRACT	TOTAL
TOTAL ALLIED	$23,906.06	$4,260	$28,166.09*
TOTAL CITY	19,407.06	5,400	24,807.06
GRANT TOTAL			$52,973.15

*Exclusive of other Contractors

Richard G. Heystek
Sewer Construction Supervisor

RGH:rc
cc: R. G. Heystek & File

CITY OF KALAMAZOO

DEPARTMENT OF PUBLIC WORKS
241 WEST SOUTH STREET
KALAMAZOO, MICH 49007
PHONE (616) 385-8002

INVOICE 0800

DATE 7/7/80

DEPARTMENT CREDIT REFERENCE

202-474-601.00-641

TERMS NET

Allied Paper Incorporated
P.O. Box 2528
Kalamazoo, MI 49003

Attention: Mr. Al Vickery
YOUR PURCHASE ORDER NUMBER

PLEASE FOLLOW THESE INSTRUCTIONS
#1 MAKE CHECK PAYABLE TO CITY TREASURER
#2 MAIL TO CITY HALL AT BELOW ADDRESS
#3 RETURN UPPER PORTION OF INVOICE WITH REMITTANCE

Your P.O. #32385 Bryant Mill Div. For Allied Paper portion of labor, material, and other costs by the City of Kalamazoo crews to repair the Alcott Street Portage Creek crossing work.		$18,506.09

1% INTEREST PER MONTH AFTER 30 DAYS

THE CITY OF KALAMAZOO, 241 WEST SOUTH STREET KALAMAZOO MICH 49007 PHONE (616) 385-8002 INVOICE

PLEASE RETAIN LOWER PORTION FOR YOUR RECORDS.

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILL DIVISION
P.O. BOX 2528 KALAMAZOO, MICHIGAN 49003
PHONE (616) 345-7131

PURCHASE ORDER
NO. 32335

Please refer to this number on all inquiries

ACCT NO	DEPT	REQ BY	DATE
33-2510-200-00 M0043	Portage Creek Dam Repair	Vickery	6/6/80

SHIP TO:

[x] BRYANT MILL
[ ] MONARCH MILL
[ ] ALLIED OFFICE

TO: City of Kalamazoo
Public Works
Kalamazoo, MI 49001
Attn: Richard Heystek

INVOICE IN TRIPLICATE

QUANTITY	DESCRIPTION	UNIT PRICE	EXTENSION
	This purchase order covers Allied Paper portion of labor, material and other costs by the City of Kalamazoo crews to repair the Alcott Street Portage Creek Crossing work.		

TAXABLE [ ] NON TAXABLE [ ] This Material for Consumption or use in Industrial Processing

ENTER THIS ORDER SUBJECT TO TERMS HEREON AND CONDITIONS ON REVERSE SIDE OF THIS ORDER

BE SURE TO READ INSTRUCTIONS AND CONDITIONS ON BACK OF ORDER.

ALLIED PAPER INCORPORATED

NOTICE - IMPORTANT All invoices to us must have the following certificate stamped typed or printed
We hereby certify that these goods were produced in compliance with all applicable requirements of Section 6 7 and 12 of the Fair Labor Standards Act as amended and of regulations and orders of the United States Department of Labor issued under Section 14 thereof

By Robert Young

CITY OF KALAMAZOO, MICHIGAN

June 2, 1980

Mr. Les Stoeffler, Manager, Process Development
Allied Paper Company
Subsidiary of SCM Corporation
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Mr. Stoeffler:

Please find attached a copy of a memo from Ken Leanin which apparently resolves the discrepancies in the recently analyses of Allied Paper samples.

If you have further comments or questions concerning this sampling period, please let us know.

Yours truly,

Richard G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
Attachment
cc: File

DEPARTMENT OF PUBLIC WORKS-WASTEWATER DIVISION, 1415 North Harrison, 49007, 616-385-8157

Inter-Office

MEMO

City of Kalamazoo

To Richard G. Simms, Wastewater Superintendent Date May 30, 1980

From Kenneth Leanin, Laboratory Supervisor KCL.

Regarding Allied Paper Mill Sampling

In response to the letter from Mr. U. G. Stoeffler, Process Development Manager for Allied Paper regarding the discrepancy between their lab's and our lab's results of May 2,3,and 4, 1980, I have reviewed the lab bench sheets for those days and regret to say I have discovered a decimal error for these three days on the BOD results. Those should read:

5-2-80 - 12 mg/l
5-3-80 - 8.0 mg/l
5-4-80 - 9.0 mg/l

As far as the difference in Suspended Solids results go, I can find no problems in the raw lab data, but I do recall that the sample bottles supplied by Allied were rather deteriorated. I remember the analyst remarking that he was having difficulty with rust from the bottle lid contaminating the sample. The high results may have been due to the rust in the sample. Since the solids, though were well below the limits for surcharging, I didn't worry about it.

As for pH differences, since the samples were brought in to our lab from one to three days after they were collected I would attribute the disagreement to that delay. Other than those three days, there is pretty good agreement on the rest of the daily samples.

KL:pd
cc: File

CITY OF KALAMAZOO, MICHIGAN

August 31, 1979

Mr. Les Stoeffler, Manager
Process Development
Allied Paper Company, Div. SCM Corporation
2030 Portage Street
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

Attached for your information is a copy of the paper I will be presenting in Houston, Texas at the WPCF Conference.

If you have any questions concerning the content, please feel free to contact me.

Yours truly,

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
Attachment

cc: File

Phosphorus Addition

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

July 27, 1979

Mr. Richard Simms, Superintendent
Kalamazoo Waste Treatment Plant
1415 N. Harrison
Kalamazoo, MI 49007

Dear Dick:

Now that we are back in operation on our Bryant Clarifier, we wish to take this opportunity to thank you for your cooperation in accepting our unclarified waste from Bryant Division. Your acceptance of our waste during this six day period of major repair on our Bryant Clarifier meant that we could continue normal manufacturing operations at our Bryant Division. This is, of course, very important to us and to our employees. We appreciate the fine cooperation we have always experienced with the City officials and look forward to continued good relations.

Thanks once again.

Yours very truly,

U. G. Stoeffler
Manager, Process Development

br

cc: Orlin Loen - Assistant Director
Public Works
T.Flanagan - Allied Paper
K.Sweet " "

P.S. We will provide your office with the flow figures for the days when we bypassed the clarifier and it's metering device.

NALCO WASTEWATER TREATMENT

ALLIED

C.O.D.

N = .054 3.

DATE OF ANALYSIS 6/11/79

SAMPLE	Bl.	6/7/79	6/7/79	6/7/79									
ML SAMPLE		2.5	2.5	2.5									
ML FINISH (BURET)		18.0	5.5	11.75									
ML START (BURET)		11.9	0	5.50									
ML USED		6.1	5.5	6.25									
BLANK		6.1	6.1	6.1									
" ML USED		0.0	.6										
8000 x N x ML USED / ML SAMPLE			103										

RL. 6/12/79

N = _____

DATE OF ANALYSIS _____

SAMPLE													
ML SAMPLE													
ML FINISH (BURET)													
ML START (BURET)													
ML USED													
BLANK													
" ML USED													
8000 x N x ML USED / ML SAMPLE													

N = _____

DATE OF ANALYSIS _____

SAMPLE													
ML SAMPLE													
ML FINISH (BURET)													
ML START (BURET)													
ML USED													
BLANK													
" ML USED													
8000 x N x ML USED / ML SAMPLE													

RECEIVED
MAY 11 1979
CITY CLERK
KALAMAZOO

May 7, 1979

Allied Paper Inc.
2030 Portage St.
Kalamzoo, MI 49001

Gentlemen:

Receipt of the application for reissuance of your NPDES permit to discharge to the waters of the state is acknowledged. It has been assigned to Mr. Chester Harvey, our District Engineer, for processing. Any restrictions upon this use found to be necessary will be written into a proposed permit to discharge in accordance with the requirements of Section 8(b) Act 245, Public Acts of 1929, as amended, and the Commission's Part 21 Rules.

A copy of the proposed permit will be forwarded to you. Prior to issuance, you will have a period of not less than 30 days to review the proposed permit and comment on it. Should you wish to make further inquiry during the processing of your application, please contact Mr. Karl Zollner, Jr., Engineering & Technical Services Section, Water Quality Division at (517) 373-8088 or write him at Box 30028, Lansing, Michigan, 48909.

Very truly yours,

WATER QUALITY DIVISION

Robert J. Courchaine
Division Chief

by: Karl Zollner, Jr., P.E., Chief
Engineering & Technical Services
Section

RJC/KZ:sh
cc: Kalamazoo Co. H.D.
~~City~~ of Kalamazoo Clerk
1 C. Harvey
W. McCracken
FileR
3 Adjacent Property Owners

Inter-Office

MEMO

City of Kalamazoo

To Richard G. Simms, Wastewater Superintendent Date December 11, 1978

From Karin Long, Industrial Surveillance

Regarding Allied Paper

On November 30, 1978, I called Les Stoeffler at Allied Paper for a tour of the Allied Mills, both Bryant and Monarch. Mr. Stoeffler asked that I call back because he was too busy. During our next conversation on December 6, 1978, Mr. Stoeffler said he did not feel that the Monarch discharge was any of the cities' business and I had no right, even with the proposed ordinance, to look at either plant since Ollie, Don and Jack all seemed satisfied and Allied would bring us more samples if we wanted. Since Allied was paying us for weekly samples he saw no need on my "going on a fishing expedition". He needed to use some vacation time and would not be available for a tour.

KL:pd

cc: File

File: Allied Paper

August 16, 1978

Mr. U. G. Stoeffler
Allied Paper, Inc.
2030 Portage St.
Kalamazoo, MI 49001

Dear Les:

I am writing you to thank you for reporting the oil slick in Portage Creek to us as soon as it became apparent to you. The source of this material was traced to Van Bochove Flower Shop who had a leak in their heavy oil tank. I understand that the situation is being rectified.

Thanks to you this adverse environmental impact on Portage Creek was able to be addressed before it became even worse with time. Your thoughtfulness and cooperation are sincerely appreciated.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS/lm
cc: O. K. Loen
R. G. Simms
File

Allied Paper Co., 5/27/80
discharging milky effluent to Portage Creek

The discharge occurred at approx. 10 30 AM - 11 45 AM on 5/27/80. It originated at the Monarch Clarifier. I spoke to John Roth and he told me the problem was due to start-up this morning (they were down during the strike) I also spoke with Les Stoeffler he informed me that he had already talked with Roger Przybysz and told him of the problem. they were not bypassing, the problem was milky effluent ~~over~~ from the clarifier at Monarch.

Les also ~~m~~ said I could see inside the computer bldg, so John Roth showed me around. They have 3 samplers going, taking samples continuosly:

1) Monarch clarifier influent
2) Bryant clarifier effluent (as influent to monarch)
3) Monarch effluent (to Portage Creek)

Flow, pH, turbidity are being monitored constantly
TOC also being monitored (constantly ?)
all results going to computer
They also run BOD's daily.

Les told me not to bother with a grab sample as he felt R. Przybysz had all the necessary info.

John Roth explained the Monarch-Bryant flow to me: Monarch effluent goes to Portage Creek. If their ~~ts~~ are below their discharge limits, they are set up to accept effluent from Bryant, this saves them money since the ~~money~~ Bryant effluent goes to the kal. sewer (The less they can put in the sewer, the more money they save in sewer charges.

CITY OF KALAMAZOO, MICHIGAN

May 17, 1980

Mr. Les Stoeffler
Allied Paper Company
2030 Portage Road
Kalamazoo, Michigan 49001

Dear Mr. Stoeffler:

Attached is a summary of samples recently collected by your staff and analyzed by our Laboratory. These samples reflect that your waste stream is below the normal strength as defined by our wastewater ordinance. We will, therefore, continue billing your Company on the basis of normal strength waste with no surcharges attached.

One additional charge has been added due to the new ordinance. This new charge is called the "Demand" charge and is the cost of sewer maintenance and administration associated with the wastewater system.

I would point out that the pH range of your wastewater approches the lower level acceptable by our ordinance (6.2). You should take care not to go below this level at any time.

If you have any questions regarding this letter or the attached data, please let us know.

Sincerely,

Richard G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
Attachment
cc: J. Wagemaker
File

DEPARTMENT OF PUBLIC WORKS-WASTEWATER DIVISION, 1415 North Harrison, 49007, 616-385-8157

TABLE 2.2

Total Quantities Registered Per Month by Meters Operating at Varying Percentages of Maximum Capacity

Percentage of Safe Maximum Capacity	Meter Size and Type								
	5/8-in. Displacement	3/4-in. Displacement	1-in Displacement	1½-in. Displacement or Turbine	2-in Compound, Displacement, or Turbine	3-in Displacement	3-in. Compound	3-in. Turbine	4-in. Displacement or Compound
	Rated Maximum Capacity – *gpm**								
	20	30	50	100	160	300	320	350	500
	Thousands of Gallons								
10	86	130	216	432	691	1296	1382	1510	2160
20	173	259	432	864	1382	2592	2765	3020	4320
30	259	389	648	1296	2074	3888	4147	4536	6480
33	302	432	734	1426	2280	4320	4608	5168	7340
40	346	518	864	1728	2765	5184	5530	6048	8640
50	432	648	1080	2160	3456	6480	6912	7660	10080
60	518	778	1296	2592	4147	7776	8294	9072	12960
70	605	907	1512	3024	4838	9072	9677	10584	15120
80	691	1037	1728	3456	5530	10368	11059	12096	17280
90	778	1166	1944	3888	6221	11664	12442	13608	19440
100	864	1296	2160	4320	6912	12960	13824	15100	21600
	Thousands of Cubic Feet								
10	12	17	29	58	92	173	184	202	288
20	23	35	58	115	184	346	369	404	576
30	35	52	86	173	277	518	553	606	864
33	38	57	95	190	307	570	614	666	960
40	46	69	115	230	369	691	737	809	1152
50	58	86	144	288	461	864	922	1011	1440
60	69	104	173	346	553	1037	1106	1213	1728
70	81	121	202	403	645	1210	1290	1415	2016
80	92	138	230	461	737	1382	1475	1617	2304
90	104	156	259	518	829	1555	1659	1820	2592
100	115	173	288	576	922	1728	1843	2022	2880

CITY OF KALAMAZOO, MICHIGAN

March 3, 1980

Allied Paper, Incorporated
Ernest J. Flimczak, President
2030 Portage Street
Kalamazoo, Michigan 49003

Dear Mr. Flimczak:

Enclosed is an article about the problems created by the industrial pretreatment laws. The article appeared in the February 1980 issue of Water and Wastes Engineering. You should find it interesting.

Sincerely,

Jean Eldred

Jean Eldred,
Industrial Surveillance Technician

JE:pd
Attachment
cc: File

CITY OF KALAMAZOO, MICHIGAN

February 29, 1980

Mr. Les Stoeffler, Manager of Process
Development
Allied Paper, Incorporated
2030 Portage Street
Kalamazoo, MI 49003

Re: Wastewater Service

Dear Mr. Stoeffler:

In accordance with our contract for wastewater treatment service serving your firm, this letter is intended to serve as your official notification of an increase in wastewater treatment charges. As you know, the Kalamazoo Wastewater Treatment Facilities are currently being expanded in order to meet the stream standards which have been imposed by State and Federal regulatory agencies. You have been involved in the Facilities Planning stage, and we have had numerous meetings over the last several years as the plans for this higher degree of treatment were being developed.

The increase in wastewater service rates are based upon a rate study prepared for us by our consultants, Jones & Henry Engineers, Limited, and an executive summary of that study is enclosed herewith. Principal factors influencing the current rate increase include a substantial increase in debt service requirements in 1980, the need to establish an equipment replacement reserve fund as mandated by EPA requirements, an increase in depreciation allowance with new facilities going on line in mid-1980, the impact on inflation on our operating costs, and the deletion of the general fund subsidy and millage equivalent which has historically produced a share of the revenues for the system.

Should you have any questions with respect to this matter, please feel free to contact either Mr. Richard G. Simms, Wastewater Superintendent (385-8157) or myself.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS/ld
cc: D. H. Swets
R. G. Simms
File

Encl.

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO MICHIGAN 49003 (616) 34 7131

June 6, 1978

Mr. Felix F. Sampayo
Jones & Henry Engineers, Limited
2000 West Central Avenue
Toledo, Ohio 43606

Dear Felix:

Jack Gilman, our Vice President of Operations, and I have reviewed the flows and loadings which Allied Paper sent to the Kalamazoo Waste Water Treatment plant the past year and wish to correct our projections in the following manner:

Flow	1.8 MGD
BOD	800#/Day
Suspended Solids	400#/Day

These flows and loadings contrast to those sent previously:

Flow	0.8 MGD
BOD	750#/Day
Suspended Solids	400#/Day.

If you have any questions, please contact me.

Very truly yours,

U. G. Stoeffler
Manager, Process Development

br
cc: E.J.Gilman
bcc: M.L.Smith
J.F.Roth
R.Simms, Kalamazoo Waste Treatment Plant

Inter-Office

MEMO

City of Kalamazoo

To Richard G. Simms, Wastewater Superintendent Date May 12, 1980

From Kenneth Leanin, Laboratory Supervisor KL.

Regarding Allied Paper Mill Samples

The table below summarizes the data obtained from the Allied Paper Mill Sampling that was recently carried out.

DATE	BOD mg/l	SS mg/l	pH
4-21-80	81	23	6.5
4-22-80	60	28	7.1
4-23-80	111	16	6.8
4-24-80	126	98	6.9
4-25-80	103	28	6.5
4-27-80	71	30	6.3
4-28-80	67	60	6.4
4-29-80	64	50	6.4
4-30-80	90	65	6.9
5-1-80	85	52	6.8
5-2-80	120	86	6.6
5-3-80	80	62	6.7
5-4-80	90	48	6.7

These figures are comparable to those obtained from Allied's normal weekly sample. If more data is needed, please let me know so that daily sampling and analysis can be resumed.

KL:pd
cc: File

Jones & Henry Engineers, Limited
2000 WEST CENTRAL AVENUE, TOLEDO, OHIO 43606 · TEL. 419 / 473-9611

COBURN C METCALF, CHAIRMAN
HAROLD A KELLEY, TREASURER
MERRILL G SMITH, SECRETARY
JOHN C JENKINS
FRANZ MORSCHES
FELIX F SAMPAYO
ROGER P BAKER
ASSOCIATES
FRED M HODGINS
FRANK P McCLURE
WILLIAM H SCHWARZ
RICHARD P CROY, JR
ANTON J URBAS, JR
DAIL C HOLLOPETER
JOHN H STRATMAN
STEVEN L WORDELMAN

March 13, 1980

Richard G. Simms, P.E.
Superintendent of Sewage Treatment
1415 Harrison
Kalamazoo, Michigan 49007

Subject: Allied Paper Demand Charge

Dear Mr. Simms:

We reviewed our data on Allied Paper and determined its demand charges should be based on a 10-inch meter size. Our data indicates a monthly flow of approximately 7,000-thousand cubic feet per month. The AWWA Manual No. M6 - "Water Meters" indicates that at least a 10-inch meter would be recommended to be installed to provide the required flow (Table 2.2 attached).

The demand charge for a 10-inch meter would be $100 per month. The demand charge for a 12-inch meter is $148 per month. In addition to the demand charge, Allied Paper should be charged for any sampling performed by the City. A recommended fee schedule is shown in the Rate Study in Table 5.5.

Please call if you have any additional questions.

Very truly yours,

JONES & HENRY ENGINEERS, Limited

Steven L. Wordelman

Steven L. Wordelman

SLW/st
Attach.

CITY OF KALAMAZOO, MICHIGAN

January 22, 1980

Mr. Les Stoeffler, Manager
Process Development
Allied Paper, Incorporated
2030 Portage Street
Kalamazoo, Michigan 49003

Dear Mr. Stoeffler:

Please find attached a summary of your wastewater flow by month for the last six years. In addition, we have tabulated the total revenue paid and correlated cost per million gallon attributable to your wastewater flow.

I felt you may be interested in reviewing your situation for projecting future needs and costs associated with wastewater.

If you need any explanation concerning the attached, please feel free to contact me.

Yours truly,

Richard G. Simms

Richard G. Simms, P.E.,
Wastewater Superintendent

RGS:pd
Attachment
cc: File

Permit No. MI 0000779

MICHIGAN WATER RESOURCES COMMISSION

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; the "Act"), and the Michigan Water Resources Commission Act, as amended, (Act 245, Public Acts of 1929, as amended, the "Michigan Act"),

ALLIED PAPER COMPANY
Subsidiary of SCM Corporation

is authorized to discharge from a facility located at

1608 Lake Street
Kalamazoo, Michigan

to receiving waters named Portage Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

This permit shall become effective on the date of issuance

This permit and the authorization to discharge shall expire at midnight, September 30, 19 79. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Michigan Water Resources Commission no later than 180 days prior to the date of expiration.

Signed this _____ day of _____, for the Michigan Water Resources Commission.

W. G. Turney
Assistant Executive Secretary

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Initial Effluent Limitations

During the period beginning upon the issuance of this permit and lasting until June 30, 1977, the permittee is authorized to discharge from outfall(s) 002. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Average	Daily Maximum	Other Limitations Daily Average	Daily Maximum	Monitoring Requirements Measurement Frequency	Sample Type
Flow M^3/Day (MGD)	-	-	-	-	Continuous	
BOD_5	548(1205)	1005(2210)	-	-	Daily	24 hr. comp.
Total Suspended Solids	375(825)	1045(2300)	-	-	Daily	24 hr. comp.
Settleable Solids	-	-	-	-	Daily	Grab
Oil & Grease	-	-	-	10 mg/l	Weekly	Grab

a. The pH shall not be less than 6.5 nor greater than 9.5. The pH shall be monitored as follows: daily; grab.

b. The discharge shall not cause excessive foam in the receiving waters. The discharge shall be essentially free of floating and settleable solids.

c. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

d. Samples taken in compliance with the monitoring requirements above shall be taken prior to discharging to Portage Creek.

2. Final Effluent Limitations

During the period beginning July 1, 1977 and lasting until the expiration of this permit, the permittee is authorized to discharge from outfall(s) 002. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations kg/day (lbs/day) Daily Average	Daily Maximum	Other Limitations Daily Average	Daily Maximum	Monitoring Requirements Measurement Frequency	Sample Type
Flow M^3/Day (MGD)	-	-	-	-	Continuous	
Settleable Solids	-	-	-	-	Daily	Grab
Oil & Grease	-	-	-	-	Daily	Visual Observation
May 15 to October 15						
BOD_5	-	177(385)	-	-	Daily	24 hr. comp.
Total Suspended Solids	-	230(500)	-	-	Daily	24 hr. comp.
October 15 to May 15						
BOD_5	230(500)	(750)	-	-	Daily	24 hr. comp.
Total Suspended Solids	230(500)	(750)	-	-	Daily	24 hr. comp.

a. The pH shall not be less than 6.5 nor greater than 9.5. The pH shall be monitored as follows: daily; grab

b. The discharge shall not cause excessive foam in the receiving waters. The discharge shall be essentially free of floating and settleable solids.

c. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.

d. Samples taken in compliance with the monitoring requirements above shall be taken prior to discharging to Portage Creek.

PART I

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

The permittee shall submit monitoring reports containing results obtained during the previous month and shall be postmarked no later than the 10th day of the month following each completed report period. The first report shall be submitted within 90 days of the date of issuance of this permit.

3. Definitions

a. The daily average discharge is defined as the total discharge by weight, or concentration if specified, during a calendar month divided by the number of days in the month that the production or commercial facility was operating.

b. The daily maximum discharge means the total discharge by weight, or concentration if specified, during any calendar day.

c. The Regional Administrator is defined as the Region V Administrator, U.S. EPA, located at One North Wacker Drive, Chicago, Illinois, 60606.

d. The Michigan Water Resources Commission is located in the Stevens T. Mason Building, Lansing, Michigan.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Act, under which such procedures may be required.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

d. The analytical techniques or methods used; and

e. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monthly Operating Report. Such increased frequency shall also be indicated.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Michigan Water Resources Commission.

C. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for outfall(s) 002 in accordance with the following schedule:

a. Submit progress report to the Chief Engineer of the Michigan Water Resources Commission on or before N/A.

b. Submit a preliminary engineering report and basis of design for said facilities to the Chief Engineer of the Michigan Water Resources Commission and obtain his approval thereof on or before December 31, 1974.

c. Submit progress report to the Chief Engineer of the Michigan Water Resources Commission on or before N/A.

d. Submit final plans and specifications for said facilities to the Chief Engineer of the Michigan Water Resources Commission and obtain his approval thereof on or before June 30, 1975.

e. Commence construction of said facilities on or before March 31, 1976.

f. Submit progress report to the Chief Engineer of the Michigan Water Resources Commission on or before August 31, 1976.

g. Complete construction of said facilities on or before May 31, 1977.

h. Attain operational level necessary to meet the limitations specified herein on or before July 1, 1977.

2. The permittee shall comply with the requirements of Section 9, Part II in accordance with the following:

a. Submit plans for approval to the Chief Engineer of the Michigan Water Resources Commission necessary to comply with the primary power provision of Section 9 in Part II on or before December 31, 1974.

b. The permittee shall comply with the requirements of items 9a or 9b contained in Part II on or before June 30, 1975. Not withstanding the preceding sentence the permittee shall at all times halt, reduce, or otherwise control production in order to protect the waters of the State of Michigan upon the reduction or loss of the primary source of power.

3. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II

A. MANAGEMENT REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Containment Facilities

The permittee shall provide approved facilities for containment of any accidental losses of concentrated solutions, acids, alkalies, salts, oils, or other polluting materials in accordance with the requirements of the Michigan Water Resources Commission Rules, Part 5.

3. Operator Certification

The permittee shall have the waste treatment facilities under the direct supervision of an operator certified by the Michigan Water Resources Commission, as required by Section 6a of the Michigan Act.

4. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

5. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible, all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

6. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

7. By-passing

Any diversion from or by-pass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Michigan Water Resources Commission and the Regional Administrator, in writing, of such diversion or by-pass.

8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

9. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

a. Provide an alternative power source sufficient to operate facilities utilized by permittee to maintain compliance with the effluent limitations and conditions of this permit which provision shall be indicated in this permit by inclusion of a specific compliance date in each appropriate "Schedule of Compliance for Effluent Limitations", or

b. Upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Executive Secretary of the Michigan Water Resources Commission, the Regional Administrator and/or their authorized representatives, upon the presentation of the credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Michigan Water Resources Commission and the Regional Administrator.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act and Rule 2128 of the Water Resources Commission Rules, Part 21, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State Water Pollution Control Agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Sections 7 and 10 of the Michigan Act.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully, all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. Toxic Pollutants

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "By-passing" (Part II, A-7) and "Power Failures" (Part II, A-9), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond his control, such as accidents, equipment breakdowns, or labor disputes.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor infringement of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

ALLIED PAPER COMPANY

Kalamazoo, Michigan
MI 0000779

The mixing zone for purposes of evaluating compliance with the states water quality standards is defined as the right 1/4 of Portage Creek a distance of 600 feet downstream from the discharge.

Date September 6, 1974

PUBLIC NOTICE

Michigan Water Resources Commission
Stevens T. Mason Building
Lansing, Michigan 48926
517-373-8088

Permit Number:
MI 0000779

NOTICE: Application for National Pollutant Discharge Elimination System (Public Law 92-500) Permit by Allied Paper Company, Subsidairy of SCM Corp. Kalamazoo Michigan, to discharge treated process wastes.

Allied Paper Company has applied for a National Pollutant Discharge Elimination System (NPDES) Permit to discharge treated process wastes into the waters of the State of Michigan. The permit will be issued by the Michigan Water Resources Commission.

The applicant is engaged in the manufacture of paper for printing and converting. The company discharges its effluent after treatment to Portage Creek.

On the basis of preliminary staff review and application of applicable standards and regulations, the Michigan Water Resources Commission proposes to issue a permit for the discharge subject to certain effluent limitations and special conditions. The permit expiration date is September 30, 1979.

The proposed determination to issue an NPDES Permit is tentative. Persons wishing to comment upon, or object to, the proposed determination are invited to submit the same in writing to:

Mr. James N. Howell
Division Permit Coordinator
Michigan Water Resources Commission
Stevens T. Mason Building
Lansing, Michigan 48926

The permit application number should appear next to the above address on the envelope and the first page of any submitted comments. All comments received within thirty (30) days of the date of issuance of this public notice will be considered in the formulation of the final determinations. If no written objections are received, the Michigan Water Resources Commission will issue its final determinations no later than sixty (60) days following the date of this notice.

The application, proposed permit including proposed effluent limitations and special conditions, comments received, and other information, are on file and may be inspected at the Water Resources Commission, 8th Floor, Stevens T. Mason Building, Lansing, Michigan and at the District office located at 4056 Plainfield Ave., N.E., Grand Rapids at any time between 9:30 a.m. and 3:30 p.m., Monday through Friday. Copies of the Public Notice and the corresponding Fact Sheet summarizing application information and proposed permit conditions are available at no charge at the Michigan Water Resources Commission. Copies of all other information are available at a cost of $.20 per page at the Michigan Water Resources Commission.

Please bring the foregoing to the attention of persons whom you know would be interestec in this matter.

Permit Number:
MI 0000779

FACT SHEET

Portage Creek is classified for Recreation - partial body contact; Fish, Wildlife, and Aquatic Life - intolerant fish, warm-water species; Agriculture; Commercial; Water Supply - industrial; and other uses. A more complete description of the discharges and a sketch of their location follow below.

Description of Existing Discharge

Outfall 002

	Average	Maximum
Flow (MGD)	3.83	4.11
Temperature (°F)		
Winter	74	77
Summer	79	82
pH	6.4	7.2
Waste Constituents		
Biochemical Oxygen Demand	1,205 lbs/day	2,207 lbs/day
Chemical Oxygen Demand	1,002 mg/l	---
Total Suspended Solids	824 lbs/day	2,295 lbs/day
Total Organic Carbon (TOC)	22.0 mg/l	---
Sulfate	56.0 mg/l	---
Chloride	55.0 mg/l	---
Titanium	2.0 mg/l	---

Proposed Determinations

The Michigan Water Resources Commission has examined the above application. The effluent limitations contained in the proposed permit are based upon application of guidance materials reflecting "best practicable control technology currently available" and the State of Michigan Water Quality Standards, whichever is more restrictive. The Michigan Water Resources Commission proposes to issue the applicant a permit to discharge subject to effluent limitations and certain other conditions. The following is a brief description of the proposed effluent limitations and special conditions:

1. Proposed Limitations

CONSTITUENTS	AVERAGE	MAXIMUM
May 15 to Oct. 15		
BOD_5	---	385 lbs/day
Total Suspended Solids	---	500 lbs/day
Oct. 15 to May 15		
BOD_5	385 lbs/day	500 lbs/day
Total Suspended Solids	500 lbs/day	750 lbs/day

2. Proposed Special Conditions

The company is given until July 1, 1977 to meet the new limitations. Monitoring of essential parameters with monthly reporting are specified in the permit. The permit expiration date is September 30, 1979.

Register of Interested Persons

Any person interested in a particular application or group of applications, may leave his name, address, and phone number as part of the file for an application. The list of names will be maintained as a means for persons with an interest in an application to contact others with similar interests.

Public Hearing

If submitted comments indicate a significant public interest in the application or if useful information may be produced thereby, the Michigan Water Resources Commission at its discretion, may hold a public hearing on the application. Any person may request the Michigan Water Resources Commission to hold a public hearing on the application.

Public notice of a hearing will be circulated at least thirty (30) days in advance of hearings. The hearing will be held in the vicinity of the discharge. Thereafter, the Michigan Water Resources Commission will formulate its final determinations within sixty (60) days. Further information regarding the conduct and nature of public hearings concerning discharge permits may be obtained by writing or visiting the address shown on the Public Notice.

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

July 1, 1970

Mr. Leonard Pratt, Superintendent
Sewage Treatment Works
Kalamazoo City Hall
Kalamazoo, Mighican

Dear Len:

Due to faulty totalizer meter, which records the effluent flow from our Bryant Clarifier to your trunk line, we requested a correction in our June billing. We mutually agreed to reduce the totalizer flow reading for June by 5.220 million gallons. This was based on a correction factor of 130 gpm for the period of faulty operation, plus excessive flows of 2.0 million gallons on June 20 and 0.380 million gallons on June 27. On both of these days our Bryant Division was down.

We appreciate the cooperation we always receive from you and your department, and particularly your considerations on this matter.

Yours very truly,

ALLIED PAPER, INC.

U. G. Stoeffler,
Manager Process Development

UGS/jm

cc: R. J. Willie

September 30, 1969

Mr. Donald Swets
Director of Public Works
City Hall
241 W. South
Kalamazoo, Michigan

Dear Don:

We, Jack Gilman, Ray Willie and I, have enjoyed working with you, Oley Loen, and Len Pratt the last two years. We have always maintained a fine relationship between your department people and ourselves, but on this project we saw exhibited a great cooperative effort to solve a problem. Yesterday morning as the first of the Bryant clarifier effluent began to flow to your interceptor was an exciting climax to the months of meetings, planning, and exploratory trials.

We sincerely thank you for such dedicated help and cooperation. We are always pleased to work with you, Oley, and Len, and look forward to continued common effort.

Sincerely,

U. G. Stoeffler
Manager Process Development

UGS:ks

cc: E. J. Gilman
R. J. Willie
Mr. Orlen Loen
Len Pratt

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
HARRY H. WHITELEY
Chairman
CARL T. JOHNSON
E. M. LAITALA
ROBERT C. McLAUGHLIN
AUGUST SCHOLLE

ROBERT J. FURLONG
Secretary to the Commission

GEORGE ROMNEY, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926

RALPH A. MAC MULLAN, Director

WATER RESOURCES COMMISSION
JOHN E. VOGT
Chairman
STANLEY QUACKENBUSH
Vice Chairman
GERALD E. EDDY
JOHN P. WOODFORD
LYNN F. BALDWIN
JIM GILMORE
GEORGE F. LIDDLE

4056 Plainfield, N. E.
Grand Rapids, Michigan 49505

April 11, 1969

Mr. E. J. Gilman
Vice President of Manufacturing
Allied Paper Corporation
Kalamazoo, Michigan

Dear Mr. Gilman:

This is to inform you of a loss from the King Division's sludge ponds on March 12, 1969. Approximately 100 gallons per minute of waste was flowing into the Kalamazoo River and resulted in the stream being discolored. A sample of this flow had analyses as follows:

5 day B.O.D.	430 mg/l
Suspended Solids	5050 mg/l

Upon finding this, Mr. Ray Willey of your staff was contacted and corrections were made. We noted, however, that the sludge level was approaching the top of the dyke at certain points. We trust that the dried sludge will be removed and dyke levels raised as necessary to contain all of the sludge for drying.

In addition to the King Division problem, we also viewed the sludge ponds for the Bryant and Monarch Divisions. The sludge volume in the Monarch pond was practically level with the top of the dyke, particularly along the eastern end. The Bryant Division's south pond had a supernatant overflow which had caused a sludge bank and was resulting in discoloration of Portage Creek. We acknowledge that efforts were being made to raise the height of the Bryant dykes.

Effective operation of the sludge disposal facilities is an important part of your water pollution control program and must not be neglected. We ask that frequent inspections be made of the sludge drying lagoons and repairs made as needed. We are particularly concerned with the Monarch pond at this time.

MICHIGAN
THE GREAT LAKE STATE

1-L

We shall schedule a follow up visit for the near future and hope to find all aspects of waste treatment is satisfactory order.

Very truly yours,

WATER RESOURCES COMMISSION

Chester Harvey JLP

Chester Harvey
District Engineer

JLP:as

cc: Len Pratt
W.R.C., Lansing

DEPT. OF PUBLIC WORKS, KALAMAZOO . SERVICE REQUEST NO. _____

REPORTED by: Public Wor (Olay) REC'D. by F.P. DATE 11/24/76

ADDRESS Dan French-502 Homecrest PHONE 382-3874 TIME 4:23 AM (PM)

LOCATION Portage Creek REFERRED to L.M. Pratt BY RADIO ( )

STEP 1

( ) Const. Clean-up ( ) Sweeping ( ) C/G Repair ( ) Storm Conn.
( ) Curb Lawn Replac. ( ) Dust ( ) Leaves ( ) Guardrail ( ) Inlet Plugged
( ) Street -Grading/Gravel ( ) Ice Control ( ) Hazardous S/W ( ) Sanitary Conn.
( ) Shoulder-Grading/Gravel ( ) Snow Plowing ( ) Loose MH Cover ( ) Sanitary Stoppage
( ) Patch/Repair Street ( ) Snow Removal ( ) Water Standing ( ) Odor from Plant
(X) Other or Remarks Mr. French reports that Portage Creek, as of this report) is "as green colored as pea soup."
This was called to S.T.W. to have as a matter of record.

STEP 2

INVESTIGATED by _____ DATE _____ CONTACTED OWNER _____

EMERGENCY or TEMPORARY ACTION TAKEN: _____

WORK ASSIGNED TO _____

STEP 3

WORK ACCOMPLISHED by _____ DESCRIPTION: _____ WORK DATES:

PROMISED: _____

SCHEDULED: _____

COMPLETED: _____

CHECKED by _____ CHECKED: _____

Form E-46R - 1/2/75

DEPT. OF PUBLIC WORKS, KALAMAZOO SERVICE REQUEST NO. _____

REPORTED by: [illegible] REC'D. by [illegible] DATE _____

ADDRESS [illegible] PHONE 382-38[illegible] TIME _____ AM/PM

LOCATION Portage Creek REFERRED to [illegible] BY RADIO ( )

STEP 1

( ) Const. Clean-up ( ) Sweeping ( ) C/G Repair ( ) Storm Conn.
( ) Curb Lawn Replac. ( ) Dust ( ) Leaves ( ) Guardrail ( ) Inlet Plugged
( ) Street -Grading/Gravel ( ) Ice Control ( ) Hazardous S/W ( ) Sanitary Conn.
( ) Shoulder-Grading/Gravel ( ) Snow Plowing ( ) Loose MH Cover ( ) Sanitary Stoppage
( ) Patch/Repair Street ( ) Snow Removal ( ) Water Standing ( ) Odor from Plant
(X) Other or Remarks Mr. French reports that Portag[illegible] this report) is "as green colored as [illegible] soup." This was called to S.T.W. to [illegible] as a matter of [illegible].

STEP 2

INVESTIGATED by _____ DATE _____ CONTACTED OWNER _____

EMERGENCY or TEMPORARY ACTION TAKEN: _____

WORK ASSIGNED TO _____

STEP 3

WORK ACCOMPLISHED by _____ DESCRIPTION: _____

WORK DATES:

PROMISED: _____

SCHEDULED: _____

COMPLETED: _____

CHECKED by _____ CHECKED: _____

Form E-46R - 1/2/75

DEPARTMENT OF PUBLIC WORKS, CITY OF KALAMAZOO

To Len Pratt Date November 24, 1976

From Oley Re Portage Creek

This afternoon (@ 4:15 p.m.) I had a call from Dan French, 502 Homecrest, 382-3874, who reported that Portage Creek presently looked like pea soup. The water was green in color and there was some foam. He had called Allied and talked with Mr. Vickery, who referred him to Mr. Harricks. Mr. Harricks (sp?) did not know of the condition, but seemed anxious to go find out, according to Dan French. Dan's call to this Office was an appeal to do something if we could but at least make a record of the condition for future reference. Dan ~~the~~ said that his neighbor, Mr. Van Eugen had also seen the condition of the creek today. I did not send any city men out, but did call the info to Fran.

E-72 ORAL messages waste your time. – PUT IT IN WRITING

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
HARRY H. WHITELEY
Chairman
CARL T. JOHNSON
E. M. LAITALA
HILARY F. SNELL
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor
DEPARTMENT OF NATURAL RESOURCES
WATER RESOURCES COMMISSION
STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926
RALPH A. MAC MULLAN, Director

WATER RESOURCES COMMISSION
JOHN P. WOODFORD
Chairman
ALVIN R. BALDEN
Vice Chairman
CHARLES D. HARRIS
JOHN E. VOGT
STANLEY QUACKENBUSH
THOMAS F. JAMES
JOHN H. KITCHEL, M.D.

4056 Plainfield Avenue, N.E.
Grand Rapids, Michigan 49505

November 19, 1975

Mr. Jack Gilman
Allied Paper Incorporated
P. O. Box 2528
Kalamazoo, Michigan 49003

Dear Mr. Gilman:

The City of Kalamazoo relayed a complaint in regard to turbidity and discoloration of Portage Creek between Cork and Alcott Streets. Our information indicated this was occurring on weekends, especially Saturdays.

In order to confirm the basis of this complaint, one of our staff members visited the complainant on Saturday, November 8, 1975. The river remained normal until approximately 10:00 A.M. and then the river water was noted to change drastically with a white color and marked increase in suspended solids.

A followup at the Monarch clarifier showed this to be the source of the high turbidity and suspended solids. Further contact with mill personnel confirmed that cleanup and washdown of equipment beginning around 7:00 A.M., overloaded the clarifier's capability and a substantial carryover of suspended solids takes place two to three hours after cleanup operations begin.

A grab sample of the clarifier effluent taken on Saturday, November 8, 1975, shortly after 10:00 A.M. had the following concentrations:

5-Day B.O.D.	146 mg/l
Suspended Solids	212 mg/l
Volatile Suspended Solids	68 mg/l

If the waste volume is normal and the concentration remained at the level of the grab sample, the daily limitation of pounds would be almost double the level of the permit.

Is there a procedure or a change in method or adjustments that can be accomplished to overcome this periodic short-term exceedence of permit levels?

More

MICHIGAN
THE GREAT LAKE STATE

We also discovered another outlet from the machine room basement containing miscellaneous drainage generally clear but with a marked oil film. Our data does not indicate this source to be set out in the permit for the Monarch mill. This source should be addressed and eventually placed in the permit. We would anticipate only an oil and grease restriction and monitoring.

After your staff has evaluated our findings, would you please communicate on the points raised.

Very truly yours,

WATER RESOURCES COMMISSION

Chester Harvey

Chester Harvey,
District Engineer

CH/mc
cc: L. M. Pratt
Karl Zollner

ROGER PRYZBE - GRAND RAPIDS DNR

CALLED 11/10/75 RE: HIS INVESTIGATION AT ALLIED PAPER ON 11/8/75

HE OBSERVED CONDITION REFERRED TO BY COMPLAINANTS. SOLIDS LOSS FROM McNARCH MILL CLARIFIER THE RESULT HE BELIEVES, AFTER TALKING WITH SHIFT SUPERVISOR AT McNARCH, OF LARGE VOLUMES OF WATER USED FOR CLEAN-UP, REDUCING DETENTION TIME IN CLARIFIER.

HE COLLECTED SAMPLES AND WHEN HE HAS LAB. RESULTS WILL MAKE A REPORT. HE WILL BE WORKING WITH ALLIED OFFICIALS TO ARRIVE AT SOLUTION TO PROBLEM.

Inter-Office

MEMO

City of Kalamazoo

To Mr. Bruce C. Brown, City Manager Date 11/5/75

From Mr. Donald H. Swets, Director of Public Works

Regarding Pollution of Portage Creek - Allied Paper

In response to your request of 11/3/75, and the notes from Commissioner Cayemberg regarding an incidence of apparent pollution of Portage Creek, the following is submitted:

Len Pratt reported to the Michigan Department of Natural Resources office in Lansing, the relayed report from Mr. Garrit VanIngen (426 Homecrest) with respect to the incident on October 27th. In discussing this with Mr. Ray Willey of Allied, it appears that there was some foaming at the outfall of their clarifier serving the Monarch Mill. This foam, when it hits the waters of Portage Creek, is dissipated but during the time it is so doing, it detracts from the appearance of the water. The foam would not have all that much pollution associated with it since much of it is due to air entrainment as the water drops in elevation from the effluent trough of the clarifier into the Creek. We have a similar foaming problem at our Treatment Plant outfall at times and when thare are any waves along the shore of a body of water, you will observe foam accumulate at the shoreline.

The incident of 11/1/75, reported by Dan French (502 Homecrest) was given to Len Pratt to investigate late Tuesday, 11/4/75. He attempted to contact Les Stoeffler or Ray Willey at Allied at about 9:00 a.m. 11/5/75, but they were not available at that time, consequently Len called Chet Harvey at the Michigan Department of Natural Resources office in Grand Rapids and gave him the reports on both of these incidents. Mr. Harvey advised that his office will schedule Saturday visits by members of their staff to this area, and will thus follow up on this to ascertain the nature of the problem and the remedies therefore.

I understand that one of the citizens at the west end of Homecrest has indicated that their appears to be a build up of soft material in the bottom of the Creek in this vicinity which was not present a year or so ago. It is possible that with the extremenly intense rainfalls we have had this year some of the fines, including clays, etc., removed from the Paper Mill Wastewater, may have washed down into the Creek. These fines would tend to be deposited where the velocity of the flow in the Creek decreases, as it does as it approaches the backwater formed by the Alcott Street Dam. Sedimentation thus tends to take place in these backwater areas and we did have some soil erosion problems upstream of this point tributary to Portage Creek (such as the washout of the side of the hill along Cork, just west of Burdick). As you know, Allied is desirous of lowering the water level behind the Alcott Street Dam and such an action will reduce the reach of the tailwater allowing the natural flow of Portage Creek to scour out some of the siltation that has taken place

in this vicinity. Lowering the water level upstream of the Alcott Dam will remove much of the present water surface which now exists, and we hope to incorporate some discharge controls which would restrict the flow of water during peak flow periods, so that it would back up and again cover the area it now covers for relatively short periods of time during those peak flows. It should be noted that if these steps are taken to lower the water level in the Bryant Mill Ponds, the people on the west end of Homecrest will no longer look out upon a water expanse during most of the year as they do now.

Donald H. Swets, P.E.
Director of Public Works

DHS:rc
cc: D. H. Swets
O. K. Loen
L. M. Pratt
File

CITY OF KALAMAZOO, MICHIGAN

September 11, 1975

Mr. E. J. Gilman
Vice President-Manufacturing
Allied Paper, Inc.
2030 Portage Road
Kalamazoo, Michigan

Dear Mr. Gilman:

I appreciated the opportunity of going with you and Mr. U. G. Stoeffler to Grand Rapids to meet with Chester Harvey, Galen Kilmer, and Roger Prysbys of the Michigan Department of Natural Resources. The program which was outlined at this meeting, namely, that of rearrangement of your facilities so as to permit a variable flow from the Bryant Clarifier Effluent to go to the Monarch Clarifier with the balance of the Bryant Clarifier Effluent coming into the City of Kalamazoo Wastewater System, appears to be a valid approach towards optimizing your facilities and minimizing the load to our wastewater system.

Inasmuch as the City of Kalamazoo's wastewater treatment facility is a point source into the Kalamazoo River, as is Portage Creek, we would be concerned about any adverse impact on the Kalamazoo River from Portage Creek flows. It is my understanding that your plan contemplates maintaining the allowable discharge from Portage Creek into the Kalamazoo River and thus would not adversely affect the allowable discharge from our Wastewater Treatment Works.

An integral part of your plan as presented involves the lowering of the water level in the Bryant Mill Pond, and in effect eliminating this impoundment of Portage Creek. It appears to me that this presents us with an ideal opportunity to provide for the leveling out of peak flows in Portage Creek, utilizing the Bryant Mill Pond impoundment volume to temporarily store peak flows in the Creek. The high intensity runoff into the lower stretches of Portage Creek would thus have an opportunity to pass on to the Kalamazoo River, before the maximum flows upstream of Alcott Street became tributary to their full extent.

By designing the discharge structure at the bottom of the existing dam to pass only the normal Creek flows, flows in excess of this norm would be restrained. Water levels upstream of the Alcott Street Dam would then gradually increase with increased flows in Portage Creek until the present back water elevation is reached. All waters in excess of that which could be handled by the bottom outlet would overflow when the present overflow level is reached. Pond levels would thus never exceed levels achieved under existing conditions, and would normally be some nine and a half feet below current elevations. Please consider this letter as our request to you to make use of the Bryant Mill Pond as outlined herein.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS:rc
cc: Brown, Swets, Loen, Bishop
Chet Harvey, U.G. Stoeffler
and File

FORM MI-B

NPDES ~~Application~~ Permit NO.

MI 0023299

ADDITIONAL INFORMATION REQUIRED
FROM APPLICANTS RECEIVING INDUSTRIAL WASTE

Name of Organization Responsible for Facility

Kalamazoo, City of

To comply with the reporting requirements of Special Conditions, Page ____ of ____ of this permit, the following procedure should be utilized for each major contributing industry:

1. Major Contributing Facility: (See Instructions)

Name:	401a	Allied Paper Co-Div. SCM Corp
Street:	401b	2030 Portage St.
City:	401c	Kalamazoo
County:	401d	Kalamazoo
State:	401e	Michigan
Zip Code:	401f	49001

2. Primary Standard Industrial Classification Code: (See Instructions) 402 2621

3. Principal Product or Raw Material: (See Instructions)

		Type		Quantity		Units
Product	403a	Paper Prod.	403c	235	403e	J-1
Raw Material	403b		403d		403f	

4. Flow: Indicate the volume of water discharged into the municipal system in thousand gallons per day and whether this discharge is intermittent or continuous.

404a 956.8 thousand gallons per day

404b ___ Intermittent X Continuous

5. Pretreatment Provided: Indicate if pretreatment is provided prior to entering the municipal system. 405 X Yes ___ No

6. Characteristics of Waste Water: (See Instructions)

Parameter Name	BOD	~~COD~~	pH	TSS	COD				
Parameter Number	00310		00400	00530	00340				
Value									

It is the responsibility of the permittee to obtain the required information for all major industrial contributors to his facility, including those contributing via another system. Actual data should be provided if available; otherwise, the best estimate should be provided and the response marked "interim". If certain of the requested information does not apply, it should be marked "N.A."

Specific instructions follow:

FORM MI-B

NPDES Application No.
MI 0023299

ADDITIONAL INFORMATION REQUIRED
FROM APPLICANTS RECEIVING INDUSTRIAL WASTE

Name of Organization Responsible for Facility

Kalamazoo, City of

To comply with the reporting requirements of Special Conditions, Page ____ of ____ of this permit, the following procedure should be utilized for each major contributing industry:

1. Major Contributing Facility: (See Instructions)
   - Name: 401a Allied Paper Co.
   - Street: 401b 1608 Lake St.
   - City: 401c Kalamazoo
   - County: 401d Kalamazoo
   - State: 401e Michigan
   - Zip Code: 401f 49001

2. Primary Standard Industrial Classification Code: (See Instructions) 402 2621

3. Principal Product or Raw Material: (See Instructions)

	Type		Quantity		Units
Product	403a Paper Product	403c	235	403e	J-1
Raw Material	403b	403d		403f	

4. Flow: Indicate the volume of water discharged into the municipal system in thousand gallons per day and whether this discharge is intermittent or continuous.
   - 404a 1069.7 thousand gallons per day
   - 404b ___ Intermittent X Continuous

5. Pretreatment Provided: Indicate if pretreatment is provided prior to entering the municipal system. 405 X Yes ___ No

6. Characteristics of Waste Water: (See Instructions)

Parameter Name	BOD	pH	S.S.						
Parameter Number	00310	00400	00530						
Value	102.2	6.8	87						

It is the responsibility of the permittee to obtain the required information for all major industrial contributors to his facility, including those contributing via another system. Actual data should be provided if available; otherwise, the best estimate should be provided and the response marked "interim". If certain of the requested information does not apply, it should be marked "N.A."

Specific instructions follow:

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

Friday

DATE TEST DUE 7-27-68 D.O. & B.O.D. DATE OF ANALYSIS 7-26-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-22	D	0		~~6.0~~	~~1.0~~						
	"	0	62	4.8	/						
Allied Paper Mill		3	109	4.1	0.7	70	70	4	1.133	79.1	
"	" "	6	140	3.4	1.4	70		4	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Monday

DATE: 7-22-68

#1

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-14-68

D.O. & B.O.D.

DATE OF ANALYSIS 7-15-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-9	D	0		6.4	/						
	"	0	85	5.8	/						
	ALLIED PAPER MILL	53	53	1.5	4.3	430	335	6	0.906	304	
	"	6	124	1.0	4.8	290		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Tuesday

DATE: 7-8-68

#2

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-15-68

D.O. & B.O.D.

DATE OF ANALYSIS 7-15-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-10	D	0		6.4	/						
	"	0	143	5.7	/						
ALLIED PAPERMILL		3	5	1.2	4.5	450	343	5	1,000	343	
"	"	6	112	1.0	4.7	235		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Wed

DATE: 7-10-68

#3

E-10 REV. 6-1-6

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-16-68

DATE OF ANALYSIS 7-16-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-11	D	0		7.2	/						
	"	0	51	5.9 ~~6.4~~	/						
Allied Paper Mill		3	131	0.4	5.5	550	397	5	1,000	397	
	"	6	103	1.0	4.9	245		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: ~~[illegible]~~ Thursday

DATE: 7-16-68

#4

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-17-68

DATE OF ANALYSIS 7-17-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-12	D	0		6.8	/						
	"	0	115	6.7	/						
	Allied Paper Mill	3	118	0.7	6.0	300	298	5	1.000	298	
	"	6	127	0.8	5.9	295		"	1.000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Friday

DATE: 7-12-68

#5

E-10 REV. 6-1-6

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-18-68

DATE OF ANALYSIS 7-18-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-13	D	0		6.8	✓						
	"	0	9	6.5	✓						
	Allied Paper Mill	3	105	0.4	6.1	610	455	5	1,000	455	
	"	6	123	0.5	6.0	300		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Sat

DATE: 7-13-68

E-10 REV. 6-1-

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-28-

DATE OF ANALYSIS 7-28-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-15	D	0		6.8	/						
	"	0	54	6.6	/						
	Allied Paper Mill	3	111	0.3	6.3	630	475	5	1,000	475	
	"	6	123	0.2	6.4	320		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY:

DAY: Monday

DATE: 7-15-68

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

October 19, 1972

Mr. Leonard Pratt
Superintendent
Kalamazoo Sewage Treatment Works
1415 North Harrison Street
Kalamazoo, Michigan

Dear Len,

I would like to formally request a credit of 5.176 million gallons for the period 10-2 through 10-13. As I mentioned to you over the phone, this total gallonage is the amount over two million gallons which the totalizer read for the days included. The flow to the clarifier exceeded the capacity of the pipe to take the effluent away and the clarifier ran over and caused a static condition at the weir sending the signal to the totalizer that a maximum flow was being maintained at the weir. The totalizer chart showed maximum flow for this period of time and the total gallonage for the Monarch and Bryant clarifier was much higher than our normal periods. Based on this data, we are asking for a credit for the number of gallons stated.

Thank you very much for cooperating with us on this matter. We will be interested in seeing the test results of the samples that you took from the deinking operation of the American Pulp Company.

Yours very truly,

U.G. Stoeffler, Manager
Process Development

cc: E.J. Gilman
R.W. Willie

UGS:bn

ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

March 17, 1971

Mr. Leonard Pratt
Operator Waste Treatment Plant
City Hall
241 West South Street
Kalamazoo, Michigan

Dear Len,

We at Allied appreciate very much your working with us on our waste effluent from our Bryant clarifier. We particularly want to thank you for understanding our recent problem March 9 and 10, 1971 when the totalizer read much higher than the actual flow which you received.

You have always exhibited the finest cooperation between the municipal government and industry and we look forward to continued fine relations between us.

Sincerely,

U.G. Stoeffler, Manager
Research Development

cc: D. Swets
E.J. Gilman
R. Willie

bn

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-21-68

DATE OF ANALYSIS 7-22-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-16	D	0		6.4	/						
	"	0	56	5.0	/						
Allied	Paper	Mill	3	72	1.4	3.6	360	267	6	0.906	292
"	"	"	6	83	1.5	3.5	175		"	"	

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Tuesday

DATE: 7-16-68

DEPARTMENT OF PUBLIC WORKS, CITY OF KALAMAZOO

To ALLIED Date

From Re PCB

1/19/73 SAMPLES (GRAB)

BRYANT CLARIFIER 6.9 ppb

SEE DNR LETTER 8/8/73

E-72 ORAL messages waste your time. – PUT IT IN WRITING

DEPARTMENT OF PUBLIC WORKS, CITY OF KALAMAZOO

To ALLIED Date

From Re PCE

3/30/73 SAMPLES (GRAB)

BRYANT CLARIFIER 0.15 ppb

SEE DNR LETTER 8/8/73

E-72 ORAL messages waste your time. – PUT IT IN WRITING

December 18, 1970

Mr. Chet Harvey
Water Resources Commission
4056 Plainfield Avenue N.E.
Grand Rapids, Michigan

Dear Chet:

The complaint you had from a resident near our Monarch Mill is completely unfounded. The Monarch clarifier influent comes from both Monarch and Bryant Divisions. All the sanitary sewage from these divisions is tied in to the City of Kalamazoo collecting system.

Based on our tests of the supernatant or decanting tube discharge, we do not consider this small flow (many days it goes not flow at all) a significant load on the receiving stream. Previous to your November 13, test, we had experienced several days of rain. The supernatant, as you term it, is really a collection of rain water in the low area of the sludge drying bed.

The results on our composite sample of King clarifier effluent for October 19, 1970 was 36 ppm B.O.D., 21 ppm suspended solids for a flow of 2.84 M.G.D.

Yours very truly,

ALLIED PAPER, INC.

U. G. Stoeffler, Manager
Process Development

UGS/jm

cc: R. M. Levy, Allied
E. J. Gilman, Allied
R. J. Courchaine, Water Resources Commission
D. H. Swets, City of Kalamazoo

DEPT. OF PUBLIC WORKS
DEC 14 1970
RECEIVED CITY OF KALAMAZOO

CITY OF KALAMAZOO, MICHIGAN

January 27, 1975

Mr. U. G. Stoeffler, Manager
Process Development
Allied Paper Incorporated
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Les:

As I indicated in our phone conversation last week, and in response to your letter of earlier this month, it is essential that cognizance be taken of the needs of Allied Paper as we develop our water pollution control "Facilities Plan". As you know, the Step 1 Facilities Plan for which we have requested a state and federal grant is the part of the three step grant process which leads up to the design and construction of water pollution control facilities in Steps 2 and 3 respectively. We need to work very closely with you, so that the needs of Allied Paper are met in this water pollution control plan.

In response to your specific inquiry having to do with increasing your present flow of about 1 MGD to approximately 2 MGD, it would appear that this could be accommodated. Certainly it is important to the City of Kalamazoo that its industries be well served by the facilities of this City.

In our conversation you indicated that you would be sending me the results of your testing, and I would look forward to seeing that, and to working with you as we develop our facilities plan over the next number of months. Highest personal regards.

Very truly yours,

Donald H. Swets, P.E.
Director of Public Works

DHS:rc
cc: L. M. Pratt
O. K. Loen
D. H. Swets
File

0.8381 × 8.34 = 6,996,426# FLOW

9397# SOLIDS = 1343 ppm

949# BOD = 136 ppm

2.5 × 8.34 × 1343 = 28,000# IN 1977

THIS WOULD INCREASE SOLIDS TO PRIM. SETT. TANKS BY APP. 78% (IGNORING RE-CYCLE)

2.5	MGD	=	28,000#	solids
1.2	"	=	13,443#	"
1.6	"	=	17,916#	"

36,000# SOLIDS TO PRIM. SETT. INCL. RECYCLE
9,397# " FROM ANNIED IF BYPASSING NOW

ASSUMING WE CAN HANDLE THRU PRIMARY, 28,000# IS APP. EQUIV. TO ½ OF A ZIMPRO UNIT.
WHAT ABOUT VACUATOR? RAPS?

SET UP MTNG. WITH LES & DON

Public Works Donald H. Swets, Director 9/30/69

Mr. James L. Caplinger, City Manager

Allied Paper Company Liquid Wastes

At 8:13 A.M. Monday, September 29 the Allied Paper Company stopped the discharge from the Bryant Clarifier from going into Portage Creek and began directing this flow to the southwest interceptor. We will therefore now receive the effluent from the Bryant settling tank into our sewerage system.

An inspection of Portage Creek was made yesterday morning which indicated a significant improvement in the creek, however there is still a fairly high degree of coloration which comes principally from the effluent from the Monarch Mill settling tank being discharged into Portage Creek at a point just north of Cork Street. I would anticipate that with the passage of time, and the flushing out of the Bryant Mill Pond, Portage Creek will show further improvement, however it will probably continue to have a certain degree of coloration.

At one time it was thought that it might be desirable to have a certain amount of publicity regarding this reduction in pollution of Portage Creek, however in talking with Jack Gilman, Vice President of Allied Paper, they have had some second thoughts on the matter, consequently flow cut-over ceremony was not scheduled. The reasoning behind this is that they have indicated that they would do this prior to October 1, and this was announced and made public, and they are just doing what they said they would do. I believe there was also some concern that this might focus attention to the fact that the load on our treatment facilities and therefore the solids loading is being increased and there might be an adverse reaction to that what with our current solids disposal problems. I believe we have responded to this latter aspect at an open Commission meeting some weeks ago, hence I was not too concerned about this aspect, but they seemed to be.

Donald H. Swets
Director of Public Works

DHS:rc
cc: D. H. Swets
O. K. Loen
L. M. Pratt
File

Public Works Donald H. Swets, Director 3/3/70

Mr. James L. Caplinger, City Manager

Allied Paper Corporation - Water Pollution Control

As a follow-up to our meeting with top officials for the Allied Paper Corporation this morning, I feel that they have done a tremendous job of water pollution control. By comparing the third quarter of 1969 with the fourth quarter thereof, it is very apparent as to the impact on their wastewater loading that was made by tieing in the effluent from the Bryant Clarifier to the Municipal Wastewater System. I think it is very fortunate that we were able to be of service to this large industry in assisting them to achieve the tremendous reduction in bio-chemical oxygen demand loading to the Portage Creek and the Kalamazoo River.

In making a percentage comparison between the loadings for 1961 as compared to the first quarter of 1970, the suspended solids being discharged into Portage Creek have been reduced 98.53%, and to the River 99.23%. The BOD loading for this same period has shown a reduction of 96.2% into Portage Creek and 95.35% into the Kalamazoo River. The total wastewater flow has been cut approximately in half both to the River and to Portage Creek. The effects of the water pollution control measures which have been instituted by the Allied Paper Corporation can readily be seen by looking at Portage Creek and the Kalamazoo River today comparing it with the appearance that it used to have. Over the last number of years, the Allied Paper Corporation has accomplished a tremendous job in reducing water pollution from their facilities, and should be highly commended for this.

Donald H. Swets
Director of Public Works

DHS:rc
cc: D. H. Swets
O. K. Loen
L. M. Pratt
File

October 2, 1969

Mr. Robert Courchaine
Regional Engineer
Bureau of Water Management
Department of Natural Resources
Stevens T. Mason Building
Lansing, Michigan 48926

Dear Bob:

We are pleased to announce that Allied Paper as of 8:00 on Monday morning, September 29, 1969, began sending the effluent from its Bryant clarifier to the City of Kalamazoo interceptor.

We appreciate the fine cooperation we have had with you and other members of the staff in helping us with this plan.

Best personal regards.

Yours very truly,

ALLIED PAPER INCORPORATED

U. G. Stoeffler
Manager Process Development

UGS:ks

cc: R. M. Levy - Allied
E. J. Gilman - Allied
Mr. Donald Swets - Dept. of Public Works

RECEIVED CITY OF KALAMAZOO
OCT 3 1969
DEPT. OF PUBLIC WORKS

SCM ALLIED PAPER INCORPORATED
SUBSIDIARY OF SCM CORPORATION

PAPER MILLS DIVISION KALAMAZOO, MICHIGAN 49003 (616) 345-7131

May 17, 1974

Mr. Leonard Pratt
Superintendent of Water Waste
Treatment Plant
City of Kalamazoo
241 West South Street
Kalamazoo, Michigan 49006

Dear Len:

Pursuant to our recent conversation concerning the quality of our Bryant clarifier influent, I have copied the Waste Tank Treatment test sheets for the period of March 5 to April 25, 1974. These results show an average daily suspended solids of 9,397#, average daily BOD of 949#. The effluent results are also shown.

We would request permission to be able to bypass the Bryant clarifier on an emergency basis when the clarifier has to be shut down for repair. Our emergency plan would be to pipe the influent from the Bryant division, and put the flow, approximately 2-2½ MGD, directly into the effluent line running to your 48" interceptor. As you know, Orlin Loen has already given approval for us to send 3 MGD for a short period of time for the same emergency plan.

I am sure that our influent would not cause any problems in your primary and secondary stages for a short period of time. As you can see, we are able to get 98% solids removed in our primary stage; therefore, this waste would not carry solids over into your secondary stage.

We appreciate your cooperation in helping us develop emergency plans when our clarifiers have to be out of service for short periods of time.

Yours very truly,
ALLIED PAPER INCORPORATED

U. G. Stoeffler, Manager
Process Development

UGS:rb
Enclosures
(dictated 5-16-74)
cc: E. J. Gilman, Allied Paper Incorporated
R. J. Willie, Allied Paper Incorporated

		SOLIDS		B.O.D.	
Date	Flow	Influent	Effluent	Influent	Effluent
3-5	0.574	9,335	190	540	245
3-7	0.941	11,995	190	860	405
3-12	0.814	11,595	110	890	320
3-19	0.748	8,035	90	955	330
3-26	0.840	15,085	135	960	305
3-28	0.861	8,295	65	910	360
4-2	0.828	7,055	55	830	435
4-4	0.886	11,765	45	890	475
4-9	1.168	8,495	75	1,250	535
4-11	0.923	10,005	135	1,110	470
4-16	0.789	5,935	75	730	370
4-18	0.729	6,235	85	700	365
4-23	0.894	11,675	245	1,465	430
4-25	0.750	6,055	155	1,200	400
Average	.8389	9,397	118	949	388.5

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: U.G. Stoeffler

From: R.J. Willie

Date: May 1, 1974

Division: Bryant

cc: E. Klimczak
~~R. Lewis~~ Harrison
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		4-22 Mon.	4-23 Tues.	4-24 Wed.	4-25 Thurs.	4-26 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		11,675		6,055		8,865
	Fiber		3,315		1,175		2,245
	Solubles		5,965		5,005		5,485
	BOD		1,465		1,200		1,330
(#/Day) Effluent	Flow (MGD)	0.860	0.894	1.084	0.750	1.045	0.927
	Susp. Solids		245		155		200
	Fiber		0		0		0
	Solubles		5,965		3,755		4,860
	BOD		430		400		415
Ash of Sol MG/L			16.8		17.6		17.2
Removal % Efficiency	Solids		97.9		97.4		97.6
	Fiber		100.0		100.0		100.0
	Solubles		0		0		0
	BOD		70.6		66.6		68.6
Total BOD for All Divisions	BOD	* 940		* 920		* 1,080	980
	Date	4-22		4-24		4-26	

Remarks: *Monarch only

Effluent turbidity
M - 175
T - 145
W - 1000+
T - 360
F - 325

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: U.G. Stoeffler

From: R.J. Willie

Date: April 24, 1974

Division: Bryant

cc: E. Klimczak
XXXXXXXXF Harriso
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		4-15 Mon.	4-16 Tues.	4-17 Wed.	4-18 Thurs.	4-19 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		5,935		6,235		6,085
	Fiber		1,040		1,520		1,280
	Solubles		5,265		4,255		4,760
	BOD		730		700		715
(#/Day) Effluent	Flow (MGD)	1.214	0.789	1.101	0.729	0.817	0.930
	Susp. Solids		75		85		80
	Fiber		0		0		0
	Solubles		3,950		3,040		3,495
	BOD		370		365		365
Ash of Sol MG/L			10.7		9.3		10.0
Removal % Efficiency	Solids		98.7		98.6		98.6
	Fiber		100.0		100.0		100.0
	Solubles		24.9		28.5		26.7
	BOD		49.3		47.8		48.5
Total BOD for All Divisions BOD Date		* 810 4-15		* 710 4-17		* 460 4-19	660

Remarks: *Monarch only

Effluent turbidity
M - 700
T - 525
W - 360
T - 170
F - 300

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: ~~U.G.~~ Stoeffler

From: R.J. Willie

Date: 4/17/74

Division: Bryant

cc: E. Klimczak
~~R. Levy~~ F. Harrisc
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		4/8 Mon.	4/9 Tues.	4/10 Wed.	4/11 Thurs.	4/12 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		8,495		10,005		9,250
	Fiber		1,245		2,005		1,625
	Solubles		6,820		6,930		6,875
	BOD		1,250		1,110		1,185
(#/Day) Effluent	Flow (MGD)	1.038	1.168	1.188	0.923	1.199	1.103
	Susp. Solids		75		135		105
	Fiber		0		0		0
	Solubles		5,845		6,160		6,000
	BOD		535		470		500
Ash of Sol MG/L			7.0		26.0		16.5
Removal % Efficiency	Solids		99.1		98.6		98.8
	Fiber		100.0		100.0		100.0
	Solubles		14.3		11.1		12.7
	BOD		57.2		57.6		57.4
Total BOD for All Divisions		* 895		* 735		* 940	855
BOD Date		4/8		4/10		4/12	

Remarks: * MONARCH ONLY

Effluent turbidity
M - 270
T - 130
W - 110
T - 105
F - 160

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: ~~U.~~G. Stoeffler

From: R.J. Willie

Date: March 20, 1974

Division: Bryant

cc: E. Klimczak
XXXXXXXXF. Harris
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		3/11 Mon.	3/12 Tues.	3/13 Wed.	3/14 Thurs.	3/15 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		11,595		7,025		9,310
	Fiber		3,970		1,660		2,815
	Solubles		6,110		4,050		5,080
	BOD		890		580		735
(#/Day) Effluent	Flow (MGD)	1.094	0.814	0.808	0.694	0.755	0.833
	Susp. Solids		110		30		70
	Fiber		0		0		0
	Solubles		4,750		3,470		4,110
	BOD		320		280		300
Ash of Sol MG/L			21.6		8.8		15.2
Removal % Efficiency	Solids		99.0		99.6		99.3
	Fiber		100.0		100.0		100.0
	Solubles		23.8		14.3		19.0
	BOD		64.0		51.8		57.9
Total BOD for All Divisions	BOD	* 435		* 730		* 420	530
	Date	3/11		3/13		3/15	

Remarks: * Monarch only

Effluent turbidity
M .250
T .675
W .600
T .260
F .500

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: U.G. Stoeffler

From: R.J. Willie

Date: April 10, 1974

Division: Bryant

cc: E. Klimczak
R. Levy
XXXXXXF. Harriso
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		4/1 Mon.	4/2 Tues.	4/3 Wed.	4/4 Thurs.	4/5 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		7,055		11,765		9,410
	Fiber		1,130		2,570		1,850
	Solubles		4,145		4,435		4,290
	BOD		830		890		860
(#/Day) Effluent	Flow (MGD)	0.982	0.828	1.122	0.886	0.814	0.926
	Susp. Solids		55		45		50
	Fiber		0		0		0
	Solubles		3,450		3,690		3,570
	BOD		435		475		455
Ash of Sol MG/L			7.3		6.1		6.7
Removal % Efficiency	Solids		99.2		99.6		99.4
	Fiber		100.0		100.0		100.0
	Solubles		16.7		16.7		16.7
	BOD		47.6		46.6		47.1
Total BOD for All Divisions BOD Date		* 1,030 4/1		* 1,165 4/3		* 1,175 4/5	1,123

Remarks: * MONARCH ONLY

Effluent turbidity
M - 155
T - 155
W - 160
T - 180
F - 175

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: D.G. Stoeffler

From: R.J. Willie

Date: 4/3/74

Division: Bryant

cc: E. Klimczak
F. Harrison
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		3/25 Mon.	3/26 Tues.	3/27 Wed.	3/28 Thurs.	3/29 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		15,085		8,295		11,690
	Fiber		2,265		1,005		1,635
	Solubles		5,605		4,310		4,955
	BOD		960		910		935
(#/Day) Effluent	Flow (MGD)	0.651	0.840	1.002	0.861	0.779	0.827
	Susp. Solids		135		65		100
	Fiber		0		0		0
	Solubles		3,500		4,310		3,905
	BOD		305		360		330
Ash of Sol MG/L			7.1		7.3		7.2
Removal % Efficiency	Solids		99.1		99.2		99.1
	Fiber		100.0		100.0		100.0
	Solubles		37.5		0		18.7
	BOD		68.2		60.4		64.3
Total BOD for All Divisions	BOD	* 350		* 965		* 1,370	895
	Date	3/25		3/27		3/29	

Remarks: * Monarch only

Effluent turbidity
M -375
T -250
W -220
T -575
F -800

ALLIED PAPER CORPORATION
WASTE TANK TREATMENT TEST

To: ~~V~~.G. Stoeffler

From: R.J. Willie & M. Smith

Date: March 13, 1974

Division: Bryant

cc: E. Klimczak
~~R. Levy~~ F. Harriso
E. Gilman
H. Horrocks
A. Vickery
K. Sweet
E. Kowall
M. Rendell
R & D File

		3/4 Mon.	3/5 Tues.	3/6 Wed.	3/7 Thurs.	3/8 Fri.	Ave.
(#/Day) Influent	Flow (MGD)						
	Susp. Solids		9,335		11,995		10,665
	Fiber		1,445		2,120		1,780
	Solubles		2,875		5,515		4,195
	BOD		540		860		700
(#/Day) Effluent	Flow (MGD)	0.431	0.574	0.512	0.941	0.933	0.678
	Susp. Solids		190		190		190
	Fiber		0		0		0
	Solubles		2,395		5,515		3,955
	BOD		245		405		325
Ash of Sol MG/L			35.9		21.8		28.8
Removal % Efficiency	Solids		97.9		98.4		98.1
	Fiber		100.0		100.0		100.0
	Solubles		16.7		0		8.3
	BOD		54.6		52.9		53.7
Total BOD for All Divisions	BOD	* 575		* 515		* 765	620
	Date	3/4		3/6		3/8	3147

Remarks: * Monarch only

Effluent turbidity
M - 260
T - 425
W - 1000+
T - 1000+
F - 600

4056 Plainfield Avenue, N. E.
Grand Rapids, Michigan 49505

December 9, 1970

Mr. U. G. Stoeffler
Manager Process Development
Allied Paper Incorporated
Paper Mills Division
Kalamazoo, Michigan 49003

Dear Mr. Stoeffler:

On December 8, 1970, we had a telephone complaint from a resident near your Monarch plant stating that the sanitary sewage from the plant discharges directly into Portage Creek.

Upon digging into his information, it appears that what he means is the sanitary sewage from the mill goes to the Monarch clarifier. He apparently received some information from a former city commissioner. I was under the impression that all sanitary sewage from mills where a sanitary sewer is available, is directed to the municipal collection system. Can you tell me how the sanitary sewage from each of your plants is handled?

In addition to the above question, we are enclosing a staff report in reference to the sludge disposal and particularly, the supernatant from the sludge areas. It seems desirable and necessary that a program be developed to bring the supernatant back to the clarifiers for fure ther treatment.

We would like your comments on these two subjects.

Very truly yours,

WATER RESOURCES COMMISSION

Chester Harvey

Chester Harvey,
Basin Engineer

CH/mc
Enclosure
cc: R. J. Courchaine
Donald H. Swets,
City Engineer

DEPT. OF PUBLIC WORKS
DEC 1 1970
RECEIVED CITY OF KALAMAZOO

E-10 REV. 6-1-

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-22-68

DATE OF ANALYSIS 7-22-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-17	D	0		6.6	/						
	"	0	8	5.7	/						
	Allied Paper Mill	3	120	1.2	4.5	450	348	6	0.96	315	
	" " "	6	121	0.8	4.9	245		6	0.96		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Jane

DAY: Wednesday

DATE: 7-17-68

E-10 REV. 6-1-

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-23-68

DATE OF ANALYSIS 7-23-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-18	D	0		7.2	✓						
	"	0	121	5.0	✓						
	Allied Paper Mill	3	32	1.5	3.5	350	283	5	1.000	283	
	" " "	6	65	0.7	4.3	215		5	1.000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Thursday

DATE: 7-18-68

E-10 REV. 6-1-6

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-24-68 D.O. & B.O.D. DATE OF ANALYSIS 7-24-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-19	D	0		7.0	/						
	"	0	86	7.0	/						
	Allied Paper Mill	3	123	1.0	6.0	600	405	5	1.200	405	
	" " "	6	137	2.8	4.2	210		5	1.000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Friday

DATE: 7-19-68

E-10 REV. 6-1-

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-25-68

DATE OF ANALYSIS 7-26-6

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-20	D	0		6.8	/						
	"	0	102	5.3	/						
	Allied Paper Mill	3	124	1.0	4.3	430	353	6	0.906	319.8	
	" " "	6	127	0.8	4.5	275		6	0.906		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Saturday

DATE: 7-20-68

E-10 REV. 6-1-
Friday

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-27-68 D.O. & B.O.D. DATE OF ANALYSIS 7-26-6

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-22	D	0		6.0	~~6.0~~						
	"	0	62	4.8	/						
Allied Paper Mill		3	109	4.1	0.7	70	70	4	1.133	79.1	
"	" "	6	140	3.4	1.4	70		4	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Monday

DATE: 7-22-68

ALLIE PAPER MILL SAMPLE

DATE	7-8 T	7-9 W	7-10 Th	7-11 Fri	7-12 Sat	7-13
pH	7.1 + 7.5	8.5 + 8.9	9.2 7.1	8.1 8.5	8.35 8.8	7.5
SETT	2.5 ml/hr	Negligible	Neg	Neg	Neg .025 ml	.2 ml
BOD	304 mg/l	343 mg/l	397 mg/l	298 mg/l	455 mg/l	475 mg/l
COD	950 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm	990 ppm

DATE	7-15 Tues	7-16 Wed	7-17 Thurs	7-18 Fri	7-19 Sat	7-22
pH	8.2 9.1	7.3 8.9	7.25 8.7	7.1 8.3	6.9 8.9	8.2 7.
SETT	Neg .05 ml	Neg	neg	Neg	Neg	
BOD	242 mg/l	315 mg/l	283 mg/l	405 mg/l	319.8 mg/l	179.1 mg/l
COD	1000 ppm	930 ppm	940 ppm	860 ppm	1000 ppm	1000 ppm

1.25 x 8.34 x 400

6000 - 7,500 lbs BOD/day

ALLIED PAPER MILL SAMPLE

SUSPENDED SOLIDS ANALYSIS

DATE	7-8 Tues	7-9 Wed	7-10 Th	7-11 F	7-12 S	7-13
DISH NO.	7h	H	G	4	9	9
DISH & SOLIDS	16.3873	17.4938	17.4876	16.0033	17.4868	16.6475
DISH	16.3796	17.4915	17.4836	16.0004	17.4828	16.6422
mg/L SOLIDS	77	23	40	29	40	53
% REDUCTION						
DISH & SOLIDS	16.3873	17.4938	17.4876	16.0033	17.4868	16.6475
DISH & ASH	16.3845	17.4921	17.4860	16.0006	17.4856	16.6455
mg/L VOL SOLIDS	28	17	16	26	18	2[illegible]
% VOL SOLIDS	36.5%	73.9%	40.0%	89.6%	45%	43.4%
pH	7.1+	8.5+	9.2	8.1	8.35	7.5

DATE	7-15 Tues	7-16 Wed	7-17 Thurs	7-18 Fri	7-19 Sat	7-22 Mon
DISH NO	7h	7h	7h	7h		
DISH & SOLIDS	16.3775	16.3772	16.3748	16.3760	16.3768	16.3755
DISH	16.3747	16.3738	16.3730	16.3739	16.3742	16.3735
mg/L SOLIDS	28	136	72	21	26	17
% REDUCTION						
DISH & SOLIDS	16.3775	16.3772	16.3748	16.3760	16.3768	16.3752
DISH & ASH	16.3760	16.3760	16.3742	16.3745	16.3763	16.3741
mg/L VOL SOLIDS	15	48	24	15	5	11
% VOL SOLIDS	53.2%	35.3%	33.3%	71.1%	19.2%	64.7%
pH	8.2	7.3	7.25	7.1	6.9	8.2

ALLIED PAPER MILL SAMPLES
SLUDGE ANALYSIS

DATE	7-8	7-9	7-10	7-11	7-12	7-13
pH	7.1+					
DISH No.	a	b	c	d	e	f
DISH & WET SLUDGE	22.056					
DISH	16.415	16.314	17.099	16.985	16.192	16.708
WET SLUDGE	5.641					
DISH & DRY SLUDGE	16.765					
DISH	16.415	16.314	17.099	16.985	16.192	16.708
TOT. SOLIDS	.350					
DISH & DRY SLUDGE	16.765	No Sample	No Sample	No Sample	No Sample	No Sample
DISH & ASH	16.660					
VOL SOLIDS	.105					
% SOLIDS						
% VOL.						

DATE	7-15 TUES	7-16 WED	7-17 THURS	7-18 FRI	7-19 SAT	7-22
DISH No						
DISH & WET SLUDGE						
DISH						
WET SLUDGE						
DISH & DRY SLUDGE	No Sample	No Sample	No Sample	No Sample	No Sample	No Sample
DISH						
TOT SOLIDS						
DISH & DRY SLUDGE						
DISH & ASH						
VOL SOLIDS						
% SOLIDS						
% VOL						
pH						

ALLIE. PAPER MILL SAMPLE

DATE	7-8 T	7-9 W	7-10 Th	7-11 Fri	7-12 Sat	7-13 Sun
pH	7.1 + 7.5	8.5 + 8.0	9.2 [illegible]	8.1 8.5	8.35 8.8	7.5
SETT	2.5 ml/hr	Negligible	Neg	Neg	Neg .025 ml	.2 ml
BOD	304 mg/l	343 mg/l	397 mg/l	298 mg/l	455 mg/l	475 mg/l
COD	950 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm	990 ppm

DATE	7-15 Tues	7-16 Wed	7-17 Thurs	7-18 Fri	7-19 Sat	7-20
pH	8.2 9.1	7.3 8.9	7.25 8.7	7.1 8.3	6.9 8.9	8.2 [illegible]
SETT	Neg 0.05 ml	Neg	Neg	[illegible]	[illegible]	[illegible]
BOD	242 mg/l	315 mg/l	283 mg/l	405 mg/l	319.8 mg/l	179.1 mg/l
COD	1000 ppm	930 ppm	740 ppm	860 ppm	1000 ppm	[illegible]

ALLIED PAPER MILL SAMPLES

SUSPENDED SOLIDS ANALYSIS

DATE	7-8 Tues	7-9 Wed	7-10 Th	7-11 F	7-12 S	7-13 M
DISH NO.	7h	H	G	4	G	9
DISH & SOLIDS	16.3873	17.4938	17.4876	16.0033	17.4868	16.6475
DISH	16.3796	17.4915	17.4836	16.0004	17.4828	16.6422
mg/L SOLIDS	77	23	40	29	40	53
% REDUCTION						
DISH & SOLIDS	16.3873	17.4938	17.4876	16.0033	17.4868	16.6475
DISH & ASH	16.3845	17.4921	17.4860	16.0006	17.4850	16.6452
mg/L VOL SOLIDS	28	17	16	26	18	23
% VOL SOLIDS	36.5%	73.9%	40.0%	89.6%	45%	43.4%
pH	7.1+	8.5+	9.2	8.1	8.35	7.5

DATE	7-15 Tues	7-16 Wed	7-17 Thurs	7-18 Fri	7-19 Sat	7-22 Mon
DISH NO	7h	7h	7h	7h		
DISH & SOLIDS	16.3775	16.3772	16.3748	16.3760	16.3768	16.3752
DISH	16.3747	16.3738	16.3730	16.3739	16.3742	16.3735
mg/L SOLIDS	28	136	72	21	26	17
% REDUCTION						
DISH & SOLIDS	16.3775	16.3772	16.3748	16.3760	16.3768	16.3752
DISH & ASH	16.3760	16.3700	16.3742	16.3745	16.3763	16.3741
mg/L VOL SOLIDS	15	48	24	15	5	11
% VOL SOLIDS	53.2%	35.3%	33.3%	71.1%	[illegible]	[illegible]
pH	8.2	7.3	7.25	7.1	6.9	8.2

ALLIED PAPER MILL SAMPLES
SLUDGE ANALYSIS

DATE	7-8	7-9	7-10	7-11	7-12	7-13
pH	7.1+					
DISH No.	a	b	c	d	e	f
DISH & WET SLUDGE	22.056					
DISH	16.415	16.314	17.099	16.985	16.192	16.708
WET SLUDGE	5.641					
DISH & DRY SLUDGE	16.765					
DISH	16.415	16.314	17.099	16.985	16.192	16.708
TOT. SOLIDS	.350					
DISH & DRY SLUDGE	16.765					
DISH & ASH	16.660					
VOL SOLIDS	.105					
% SOLIDS						
% VOL						

DATE	7-15 TUES	7-16 WED	7-17 THURS	7-18	7-19	7-20
DISH No						
DISH & WET SLUDGE						
DISH						
WET SLUDGE						
DISH & DRY SLUDGE						
DISH						
TOT SOLIDS						
DISH & DRY SLUDGE						
DISH & ASH						
VOL SOLIDS						
% SOLIDS						
% VOL						
pH						

#1

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-14-68

DATE OF ANALYSIS 7-15-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-9	D	0		6.4	/						
	"	0	85	5.8	/						
	ALLIED PAPER MILL	3	53	1.5	4.3	430	335	6	0.906	304	
	"	6	124	1.0	4.8	290		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Tuesday

DATE: 7-8-68

#2

KALAMAZOO SEWAGE TREATMENT WORKS

E-10 REV. 6-1-67

DATE TEST DUE 7-15-68

D.O. & B.O.D.

DATE OF ANALYSIS 7-15-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7/10	D	0		6.4	/						
	"	0	143	5.7	/						
ALLIED PAPER MILL		3	5	1.2	4.5	450	343	5	1.000	343	
"	"	6	112	1.0	4.7	235		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Wed

DATE: 7-10-68

#3

E-10 REV 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-16-68

DATE OF ANALYSIS 7-16-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-11	D	0		7.2	/						
	"	0	51	5.9 ~~6.4~~	/						
Allied Paper Mill		3	131	0.4	5.5	550	397	5	1.000	397	
	"	6	103	1.0	4.9	245		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: ~~[illegible]~~ Thursday

DATE: 7-10-68

#4

E-10 REV 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-17-68

DATE OF ANALYSIS 7-17-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-12	D	0		6.8	/						
	"	0	115	6.7	/						
	Allied Paper Mill	3	118	0.7	6.0	300	298	5	1.000	298	
	"	6	124	0.8	5.9	295		"	1.000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Friday

DATE: 7-12-68

#5

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-18-68

DATE OF ANALYSIS 7-18-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-13	D	0		6.8	✓						
	"	0	9	6.5	✓						
	Allied Paper Mill	3	105	0.4	6.1	610	455	5	1,000	455	
	"	6	123	0.5	6.0	300		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Sat

DATE: 7-13-68

A6

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-28-

DATE OF ANALYSIS 7-28-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLE-TION	TEST	AVE. MG./L.	DAYS	FAC-TOR	MG./L.	REMARKS
7-15	D	0		6.8	/						
	"	0	59	6.6	/						
	Allied Paper Mill	3	111	0.3	6.3	630	475	5	1,000	475	
	"	6	123	0.2	6.4	320		"	"		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY:

DAY: Monday

DATE: 7-15-68

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-21-68

DATE OF ANALYSIS 7-22-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-16	D	0		6.4	/						
	"	0	56	5.0	/						
Allied	Paper	Mill	3	72	1.4	3.6	360	267	6	0.906	242
"	"	"	6	83	1.5	3.5	175		"	"	

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Tuesday

DATE: 7-16-68

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

D.O. & B.O.D.

DATE TEST DUE 7-22-68

DATE OF ANALYSIS 7-22-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7M	D	0		6.6	✓						
	"	0	8	5.7	✓						
	Allied Paper Mill	3	120	1.2	4.5	450	348	6	0.906	315	
	" " "	6	121	0.8	4.9	245		6	0.906		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Jane

DAY: Wednesday

DATE: 7-17-68

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-23-68 D.O. & B.O.D. DATE OF ANALYSIS 7-23-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-18	D	0		7.2	✓						
	"	0	121	5.0	✓						
	Allied Paper Mill	3	32	1.5	3.5	350	283	5	1.000	283	
	" " "	6	65	0.7	4.3	215		5	1.000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Thursday

DATE: 7-18-68

E-10 REV 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-24-68 D.O. & B.O.D. DATE OF ANALYSIS 7-24-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7/19	D	0		7.0	/						
	"	0	86	7.0	/						
	Allied Paper Mill	3	123	1.0	6.0	600	405	5	1,000	405	
	" " "	6	137	2.8	4.2	210		5	1,000		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Friday

DATE: 7-19-68

E-10 REV. 6-1-67

KALAMAZOO SEWAGE TREATMENT WORKS

DATE TEST DUE 7-25-68 D.O. & B.O.D. DATE OF ANALYSIS 7-26-68

TEST DATE	SAMPLE SOURCE	SAMPLE ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
7-20	D	0		6.8	/						
	"	0	102	5.3	/						
	Allied Paper Mill	3	124	1.0	4.3	430	353	6	0.806	319.8	
	" " "	6	127	0.8	4.5	275		6	0.806		

% REMOVALS - PRIMARY		
VAC.	SED.	TOTAL

% REMOVALS - SECONDARY
TOTAL

ANAL. BY: Cooley

DAY: Saturday

DATE: 7-20-68

July 3, 1968

Water Resources Commission
200 Mill Street
Lansing, Michigan 48926

Attn: Mr. Robert J. Courchaine
Regional Engineer

Dear Bob:

This is to confirm our telephone conversation of this morning relative to the two week testing period at Bryant Mill. During these two weeks we will treat the deinked waste in the Bryant clarifier by-passing the white water from the Bryant Division. We will take samples from the clarifier effluent and both the City of Kalamazoo and our laboratory personnel will make tests on the samples.

This will also confirm your verbal approval of this two week testing program and we will convey this approval to Don Swets. We appreciate your cooperation in this project.

As you know, the City of Kalamazoo was desirous of a two week testing program as they felt they would have a better idea on the composition of the wastes we would be putting into their system. This would simulate the proposed plan outlined by our E.J. Gilman in a recent letter to the Commission.

Yours very truly,

U. G. Stoeffler, Manager
Process Development

/deo

cc R. M. Levy
E. J. Gilman
D. Swets

RECEIVED CITY OF KALAMAZOO
JUL 5 1968
DEPT. OF PUBLIC WORKS

RECEIVED
KALAMAZOO
1968
DEPT. OF PUBLIC WORKS

June 13, 1968

Mr. Loring F. Oeming, Executive Secretary
Water Resources Commission
200 Mill Street
Lansing, Michigan 48926

Dear Mr. Oeming:

Allied Paper has been directed to submit a report to your office by July 20, 1968 describing its plans to "improve the condition of Portage Creek."

Our plan, which we submitted to you verbally on May 16 and to the City Engineer of Kalamazoo on May 22, is as follows:

1. We propose to construct a pipe line from the Bryant paper mills between Alcott and Reed Streets to the Monarch clarifier which lies just north of Cork Street. This line, to be 12" in diameter, will carry the excess white water from the Bryant paper machines to the Monarch clarifier, approximately 5,000 feet. This volume is approximately 2 MGD, and will be added to the approximately 2 MGD from Monarch Mill, the total being well within the designed capacity of the clarifier. The effluent from this clarifier would be put into Portage Creek.

2. The effluent from the Bryant deinking operation, also approximately 2 MGD, would be pumped through the existing 20" line to the Bryant clarifier. The effluent from the Bryant clarifier would be piped approximately 800 feet west to the City Sanitary Sewer through another newly constructed 12" line, and would be treated in the city's primary and secondary treatment plants. This is the high-BOD and high-color portion of the present total Bryant effluent. The City Engineer of Kalamazoo has indicated that he would like to draw samples of this deinking effluent and to check its volume for about a two-week period.

3. We estimate that this plan would remove approximately 7,000 pounds of BOD per day from Portage Creek, and that it would also make a dramatic improvement in the color and turbidity of the creek.

4. By reducing the volume which is now being pumped through the 20" line by approximately 50 percent, this arrangement would also relieve the overloading condition which troubles us periodically at present, resulting in objectionable by-passing.

We have also been directed by the Commission to stop by-passing the Bryant clarifier. The by-passing of a portion of the effluent occurs when we are unable to pump the entire effluent through the 20" line to the clarifier. Any restriction in this 4,000 foot, 20" line and/or any momentary decrease in the efficiency of any one of the three vertical pumps pumping to the clarifier results in the by-passing.

To put ourselves into a position of conformance with the Commission's directive, we are continually picking up more fresh water within the Bryant mills and piping it directly into Portage Creek. We estimate that within the past week alone we have picked up an additional 250,000 gallons per day, and the volume of the Bryant effluent today is at its lowest point in history. We are also attacking the problem through a program of cleaning the 20" line, and regular inspection and cleaning of the vertical pumps. We have found this problem to be an extremely difficult one, but we are confident that our efforts will pay off and that our by-passing will be stopped within a very short time.

Very truly yours,

E. J. Gilman
Vice-President of Manufacturing

EJG:jf

cc: Mr. Don Swets, Kalamazoo City Engineer

Kalamazoo, Michigan, Fireside 5-7131

ALLIED PAPER CORPORATION

April 18, 1968

City of Kalamazoo
241 W. South
Kalamazoo, Michigan

Attn: Mr. Donald Swets
Director, Public Works

Dear Don:

The following is the data that you requested. These are averages for the first 13 weeks of 1968 based on 5 daily test determinations per week of our Bryant clarifier effluent.

Flow	1,000,000 gals.	
Suspended Solids	886 lbs.	106 ppm.
Solubles	8463 lbs.	1015 ppm.
5 day BOD	2823 lbs.	339 ppm.
Fiber	0	
Volatiles	42%	

We appreciate your help as well as Len's and Oley's in our discussions.

Very truly yours,

U. G. Stoeffler, Manager
Process Development

/deo

cc E. J. Gilman

RECEIVED CITY OF KALAMAZOO
APR 19 1968
DEPT. OF PUBLIC WORKS

JULY 8 - 20, 1968

TEST RESULTS OF TWO WEEK TRIAL AT BRYANT WASTE TREATMENT PLANT

Date	pH Inf.	pH Eff.	Flow	Solids Gms/l Inf.	Solids Gms/l Eff.	Ash Inf.	Ash Eff.	% Volatiles Inf.	% Volatiles Eff.	BOD ppm Inf.	BOD ppm Eff. *	Solubles Gms/l Inf.	Solubles Gms/l Eff.	Fiber Gms/l Inf.
7/8	10.25	7.5	1.863	2.52	.28	50.0	64.2	50.0	35.8		304	2.00	1.90	.30
7/9	9.5	9.0	1.786	2.32	.24	54.2	33.3	45.8	66.7		343	2.60	2.30	.24
7/10	11.15	9.3	1.786	3.00	.28	54.6	42.8	45.4	57.2		397	2.70	2.30	.26
7/11	10.0	8.6	1.479	2.82	.26	47.6	38.5	52.4	61.5		298	3.10	2.80	.38
7/12	10.1	9.7	1.479	2.72	.14	54.4	42.8	45.6	57.2		455	2.80	2.60	.16
7/13	-	8.8	1.863	-	.34	-	47.1	-	52.9		390	-	2.10	-
										Avg.	360			
	* City Figures													
7/15	9.9	9.1	1.479	0.46	.12	69.5	66.6	30.5	33.4	** 645	** 430	1.90	1.80	.03
7/16	9.5	8.9	1.708	1.24	.06	53.2	66.7	46.8	33.3	570	360	1.50	1.30	.22
7/17	10.0	8.7	1.786	1.80	.08	50.0	50.0	50.0	50.0	780	420	1.70	1.40	[illegible]
7/18	9.3	8.3	1.708	3.08	.08	45.4	50.0	54.6	50.0	735	405	1.80	1.00	.49
7/19	9.5	8.9	1.786	3.38	.12	53.2	50.0	46.8	50.0	790	420	1.90	1.80	.60
7/20	-	9.2	1.786	-	.06	-	66.7	-	33.3	-	450	-	1.90	-
2 week Avg.	9.92	8.85	1.709	2.33	.17	53.2	51.5	46.8	48.4	704	414	2.20	1.93	.30
	** Allied Figures				↑ 2,400 lbs/day						↑ 5,900 lbs./day		↑ 27,300 lbs/day	

October 5, 1955

Mr. C.L. Crossley,
Assistant Secretary
Allied Paper Mills
Lake Street
Kalamazoo, Michigan

Dear Mr. Crossley,

Mr. Johnson, your plant engineer, and I went over the problem of the sewage service charge yesterday. In order to ascertain the consumption of water in the office section, on the south side of Lake Street, certain minor changes in the piping and metering of the city water supply will be necessary. Upon completion of these minor modifications and after we have established a normal usage for the office section, we will be able to determine what percentage of your total water consumption from city sources is normally consumed by your office portion, this amount being contributory to our sewage treatment works. With this information we will be able to determine the amount of rebate due you for water used within the King Division, which water is not contributory to our Sewage Treatment Works. A rebate on the above described basis will then be in order.

Very truly yours,

Donald H. Swets, Sup't.
Sewage Treatment Works

cc to: Mr. Johnson

DHS/njg

ALLIED PAPER MILLS

KALAMAZOO 99 · MICHIGAN · TELEPHONE 8101

September 27, 1955

City Hall
Municiple Sewage Disposal Plant
Kalamazoo, Michigan

Attn: Mr. Sweats

Gentlemen:

We are requesting rebate of all moneys paid at our King Division toward city sewage plant, thru our plant water meters.

Yours truly,

ALLIED PAPER MILLS

C B Crossley

Assistant Secretary

CBCrossley
dg

GREASE / OIL
Partition Gravimetric Method

DATE ANALYZED 8-21-85 SAMPLE NO. APC 22289

ANALYST P.T.

Weight of flask + residue	129.4580
- " of flask	~~127.2652~~ 128.9957
1,000x g Grease/Oil	.4623 462.3
÷ l. sample .950	
= mg/l Grease/Oil	486.6

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

[illegible] PAPERS FROM [illegible]/89

Parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
[illegible]NIA NITROGEN	0.000	*	mg/l	07/0[illegible]/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]	35.000		mg/l	07/03/89	GRAB	02:15 PM
Mean	35.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ADMIUM	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]LORODIBROMOMETHANE	1.300		ug/l	07/03/89	GRAB	02:15 PM
Mean	1.300					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]OMIUM	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]	65.000		mg/l	07/03/89	GRAB	02:15 PM
Mean	65.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]PEP	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]NIDES	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

[illegible] test results below detection limits

[illegible]	VALUE		Unit	Sample Date	Sample Type	Sample Time
LOF BROMOMETHANE	00		ug/l	07/03/89	GRAB	02:15 PM
[illegible]	9.000					

Parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
[illegible]	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
MESOPY	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
[illegible]	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]EL	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	0.000	*	mg/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VEP	0.000	*	ug/l	07/03/89	GRAB	02:15 PM
Mean	0.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.140		mg/l	07/03/89	GRAB	02:15 PM
[illegible]	0.140					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS SOLIDS	17.000		mg/l	07/03/89	GRAB	02:15 PM
[illegible]	17.000					

[illegible] Below detection limit

[illegible]

[illegible]	[illegible]	Units	Sample Date	Sample Type	Sample Time
[illegible] SOLIDS	[illegible] 000	mg/l	07/03/89	GRAB	02:15 PM
	5 000				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
[illegible]	20 000	ug/l	07/03/89	GRAB	02:15 PM
[illegible]	20.000				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
	7.100	S.U.	07/03/89	GRAB	02.15 PM
[illegible]	7.100				

[illegible] below [illegible] limits

KAR Laboratories, Inc.

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Rohel Amundson

Project No.: 891281
Client No.: 1098
Project Date: 7/03/89
Date Promised: 7/24/89
Date Reported: 7/24/89
PO#: 45285

Project Desc.: Analysis of one wastewater sample

Sample No.: 891281-01 Rec'd on: 7/03/89
Sample ID: Performance Papers, APC 18489, 7/3/89

BOD	35 mg/L
COD	65 mg/L
Nitrogen, ammonia	<1.0 mg/L
PH	7.1 S.U.
Phosphorus, total (as P)	0.14 mg/L
Suspended solids, total	17 mg/L
Suspended solids, volatile	9 mg/L
MDNR Scan 1 & 2	See attached
Cyanide, total	<0.02 mg/L
Oil and grease	<1 mg/L
Cadmium, total	<0.005 mg/L
Chromium, total	<0.01 mg/L
Copper, total	<0.02 mg/L
Lead, total	<0.002 mg/L
Mercury, total	<0.0005 mg/L
Nickel, total	<0.05 mg/L
Silver, total	<0.005 mg/L
Zinc, total	0.02 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received from client.

KAR Laboratories, Inc.

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Rohel Amundson

Sample No.: 891281-01
Date Received: 7/03/89
Date Promised: 7/24/89
Date Reported: 7/24/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Performance Papers, APC 18489, 7/3/89

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	9.6	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	19	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	1.3	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	ND	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	ND		

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	ND	m-and/or p-Xylene	ND
Ethyl benzene	ND	o-Xylene	ND
Toluene	ND		

Concentrations are expressed as ug/L
"ND" means not detected. The limit of detection was 1
for all compounds except Methylene chloride, which was 10

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Timothy G Meulenberg / Steve Lewis

PURPOSE OF ANALYSIS: Compliance Monitoring

№ 4515

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
~~1~~	~~SINCLAIR VALENTINE~~	~~VAL 18489~~	~~4 - 1 liter~~	~~7/3/89~~			~~H~~	~~/ CONV, G+O METALS, CN~~
~~2~~ 1	~~SINCLAIR VALENTINE~~	~~VAL 18489~~	~~2 - 40 ml~~	~~7/3/89~~			~~H~~	~~/ VOC's~~
~~2~~								
1	PERFORMANCE PAPERS	APC 18489	4 - 1 LITER	7/3/89	2:15PM		H	CLARIFIER EFFLUENT / CLEAR / CONV, G+O, METALS, CN
2	PERFORMANCE PAPERS	APC 18489	2 - 40ml	7/3/89	2:15PM		H	CLARIFIER EFFLUENT / CLEAR / VOC's

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
✓	pH		✓	CADMIUM			EPA METHOD 601	
✓	BOD		✓	TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
✓	COD		✓	COPPER				
✓	TSS		✓	LEAD				
✓	VSS		✓	NICKEL				
✓	NH_3-N		✓	ZINC			EPA METHOD 602	
✓	TOTAL P		✓	SILVER				
~~✓~~	~~ORTHO P~~ SL		✓	MERCURY				
✓	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
✓	CN - TOTAL							
	CN - AMENABLE						OTHER DNR SCANS 1+2	

REMARKS: 891281-01

1 RELINQUISHED BY: (Signature) [signature]	DATE/TIME 7/3/89 2:45 PM	RECEIVED BY: (Signature) C. Cook XAR	DATE/TIME 7/3/89 2:45 P.M.
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

Logged in: CRC 7/3/89 3:00pm

SAMPLING RESULTS FOR PERFORMA..CE PAPERS 06/20/89-06/23/8.

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	1.140		mg/l	06/20/89	GRAB	08:35 AM
	2.900		mg/l	06/21/89	GRAB	08:45 AM
	4.700		mg/l	06/22/89	GRAB	09:30 AM
Mean	2.913					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.440		mg/l	06/20/89	24 HR COMP	08:35 AM
	0.340		mg/l	06/21/89	24 HR COMP	08:45 AM
	0.480		mg/l	06/22/89	24 HR COMP	09:30 AM
	0.180		mg/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.360					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	33.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	21.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	22.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	21.000		mg/l	06/23/89	24 HR COMP	08:55 AM
Mean	24.250					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	14.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	mg/l	06/21/89	24 HR COMP	08:45 AM
	11.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	11.000		mg/l	06/23/89	24 HR COMP	08:55 AM
Mean	9.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	32.000		ug/l	06/20/89	24 HR COMP	08:35 AM
	12.000		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	11.000					

* indicates test results below detection limits

SAMPLING RESULTS FOR PERFORMANCE PAPERS 06/20/89-06/23/89

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
pH	7.400		S.U.	06/20/89	GRAB	08:35 AM
	6.700		S.U.	06/21/89	GRAB	08:45 AM
	7.300		S.U.	06/22/89	GRAB	09:30 AM
	10.300		S.U.	06/23/89	GRAB	08:55 AM
Mean	7.925					

* indicates test results below detection limits

KAR Laboratories, Inc.

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Bruce Merchant

Sample No.: 891206-01
Date Received: 6/22/89
Date Promised: 7/13/89
Date Reported: 7/06/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Performance Papers, APC 17289

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	8.1	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	4.2
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	21	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	9.3
Dibromochloromethane	2.0	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	ND	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	ND		

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	ND	m-and/or p-Xylene	ND
Ethyl benzene	ND	o-Xylene	ND
Toluene	ND		

Concentrations are expressed as ug/L
"ND" means not detected. The limit of detection was 1
for all compounds except Methylene chloride, which was 10

Analytical Laboratory Report
City of Kalamazoo
FECL #: 6806-91-E1 et al.
May 28, 1991
Page Two

FECL #:	**6807-91-E1**		**6807-91-E2**	
Tag:	1 Borroughs BLS 12891		2 Borroughs BL3 12891	

Method 602 - Purgeable Aromatics

Benzene	<0.001	mg/l	<0.001	mg/l
Toluene	<0.001	mg/l	0.014	mg/l
Ethylbenzene	<0.001	mg/l	<0.001	mg/l
p,m-Xylene	<0.001	mg/l	<0.001	mg/l
o-Xylene	<0.001	mg/l	<0.001	mg/l

V. F. Murshak /RB

Violetta F. Murshak
Laboratory Manager

VFM/ajc

Analytical Laboratory Report
City of Kalamazoo
FECL #: 6806-91-E1 et al.
May 28, 1991
Page Two

FECL #:	**6806-91-E1**
Tag:	1 Allied Clarifier APC 12391

Organic

PCB	<0.0001 mg/l

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Cal Longcore

PURPOSE OF ANALYSIS: COMPLIANCE MONITORING

№ 7546

6806

E1

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED CLARIFIER	APC12391	2-1L	5/3/91	3:32 PM		H	SAMPLING PT. DOWNSTREAM OF CARBON

GENERAL/CONVENTIONAL	RESULT	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
pH		CADMIUM		EPA METHOD 601	
BOD		TOTAL CHROMIUM			
CBOD		HEX. CHROME			
COD		COPPER			
TSS		LEAD			
VSS		NICKEL			
NH_3-N		ZINC		EPA METHOD 602	
TOTAL P		SILVER			
ORTHO P		MERCURY			
GREASE/OIL		BERYLLIUM			
CHLORIDE		BARIUM			
CN - TOTAL					
CN - AMENABLE				✓ OTHER PCB's	

REMARKS:

DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)	DATE/TIME 5/6/91 7:40 AM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 5/6/91 7:40 AM	DATE/TIME	DATE/TIME	DATE/TIME
1 RELINQUISHED BY: (Signature) Cal Longcore	2 RELINQUISHED BY: (Signature)		

Form 1015

LTI-Limno-Tech, Inc.

Environmental Engineering

FACSIMILE TRANSMISSION COVER SHEET

TO: Bruce Merchant

COMPANY: The City of Kalamazoo

DEPARTMENT:

FAX TELEPHONE NUMBER: 616-385-3015

FROM: Gregory W. Peterson

PROJECT:

DATE: April 29, 1991

URGENT: ✓ Yes __ No

NUMBER OF PAGES: 2
(Including cover sheet)

COMMENTS: Bruce: Enclosed are the results of the metals and PCB analyses for the Allied decant lagoon effluent after treatment. The results demonstrate that the treated water complies with the City's limitations for these parameters. The results for the other parameters (BOD, TSS, VSS, dioxins, etc.) are not yet available but will be forwarded to you as soon as they are. Greg

IF YOU HAVE ANY PROBLEMS WITH THIS TRANSMISSION PLEASE CALL (313) 973-8300

2395 Huron Parkway • Ann Arbor, Michigan 48104 - Telephone: 313/973-8300 - (FAX): 313/973-1069
Other LTI Offices: South Bend, IN, and Washington, D.C.

SAMPLING RESULTS FOR P ORMANCE PAPERS FROM 11/1(9 TO 11/13/89

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	600.000		mg/l	11/10/89	24 HR. COMP	09:40 AM
	296.000		mg/l	11/11/89	24 HR. COMP	09:55 AM
	372.000		mg/l	11/12/89	24 HR. COMP	09:35 AM
	396.000		mg/l	11/13/89	24 HR. COMP	09:00 AM
Mean	416.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	562.000		mg/l	11/10/89	24 HR. COMP	09:40 AM
	581.000		mg/l	11/11/89	24 HR. COMP	09:55 AM
	612.000		mg/l	11/12/89	24 HR. COMP	09:35 AM
	612.000		mg/l	11/13/89	24 HR. COMP	09:00 AM
Mean	591.750					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.670		mg/l	11/10/89	24 HR. COMP	09:40 AM
	0.890		mg/l	11/11/89	24 HR. COMP	09:55 AM
	0.260		mg/l	11/12/89	24 HR. COMP	09:35 AM
	0.550		mg/l	11/13/89	24 HR. COMP	09:00 AM
Mean	0.592					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	84.000		mg/l	11/10/89	24 HR. COMP	09:40 AM
	23.000		mg/l	11/12/89	24 HR. COMP	09:35 AM
	15.500		mg/l	11/13/89	24 HR. COMP	09:00 AM
Mean	40.833					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	14.000		mg/l	11/10/89	24 HR. COMP	09:40 AM
Mean	14.000					

* indicates test results below detection limits

CITY OF KALAMAZOO WATER RECLAMATION PLANT
INDUSTRIAL SAMPLING SHEET

ACCOUNT: PERFORMANCE PAPERS

ADDRESS:

SAMPLING LOCATION: ~~INTERCEPTOR~~ Discharge Line to Interceptor

CREW: LEWIS / ROCHOW / LONGCORE

SAMPLE DATES: BEGIN: 11/9/89 END:

SAMPLER #: BATTERY # / DAYS USED:

TYPE OF SAMPLE: [X] TIME COMPOSITE [ ] FLOW COMPOSITE

SAMPLE	TIME ON	DATE	TIME OFF	DATE	# ALIQUOTS	VOLUME
#1	2:30 PM	11/9/89	9:40AM	11/10/89	116	5L
REMARKS:						
#2	9:50AM	11/10/89	9:45AM	11/11/89	144	250ml
REMARKS:						
#3	9:55AM	11/11/89	9:25AM	11/12/89	142	8L
REMARKS:						
#4	9:35AM	11/12/89	9:00AM	11/13/89	141	8L
REMARKS:						
#5						
REMARKS:						

FINAL REMARKS: * Mostly clean up water (pH 2.1) 11/11

CITY OF KALAMAZOO Fri°
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 5178

SAMPLERS: (Signature) Steven M. Rochow

PURPOSE OF ANALYSIS: Compliance Monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Performance Paper Special	APC1 31489	1 - one liter	11/10/89	9:40AM	24h		Perf. Paper Insp. / Cloudy, Gray, Normal Solids / CONU

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
X	pH	Comp 7.8		CADMIUM			EPA METHOD 601	
X	BOD	600 mg/l		TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	562 mg/l		COPPER				
X	TSS	84 mg/l		LEAD				
	VSS	14 mg/l		NICKEL				
	NH_3-N			ZINC			EPA METHOD 602	
X	TOTAL P	0.67 mg/l		SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

T. Wright 11-30-89

REMARKS:

X Lims 11-11-89 NW

1 RELINQUISHED BY: (Signature)	DATE/TIME	2 RELINQUISHED BY: (Signature)	DATE/TIME	3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
Rochow	11/10/89 16:10 AM						

RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO SAT
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 5179

SAMPLERS: (Signature) Steven M. Rochow

PURPOSE OF ANALYSIS: Compliance Monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Performance Paper Special	APC 1 31589	1-one liter	~~11/10/89~~ 11/11/89 RM	9:55AM	24A		Perf. Paper Insp. / Clear Colorless / Conv

GENERAL/CONVENTIONAL		RESULT	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
		Comp				
X	pH	2.1	CADMIUM		EPA METHOD 601	
X	BOD	296 mg/l	TOTAL CHROMIUM			
	CBOD		HEX. CHROME			
X	COD	581 mg/l	COPPER			
SK 2	TSS	—	LEAD			
	VSS	—	NICKEL			
	NH_3-N		ZINC		EPA METHOD 602	
X	TOTAL P	0.89 mg/l	SILVER			
	ORTHO P		MERCURY			
	GREASE/OIL		BERYLLIUM			
	CHLORIDE		BARIUM			
	CN - TOTAL	T. Wright 11-22-89				
	CN - AMENABLE				OTHER	

REMARKS:

✓ Lims 11-12-89 NN

1 RELINQUISHED BY: (Signature) Rochow	DATE/TIME 11/11/89 10:20 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Mary Stewart	DATE/TIME 11/11/89 10:20 AM
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 5199

SAMPLERS: (Signature) Steven M. Rochow

PURPOSE OF ANALYSIS: Compliance Monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Performance Paper Special	APC# 31789	1-1L	11/13/89 OK	9:00AM	24h		Interceptor / Semi-Cloudy / Few Solids / CONV

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
X	pH	8.0		CADMIUM			EPA METHOD 601	
X	BOD	396 mg/l		TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	612 mg/l		COPPER				
X	TSS	15.5 mg/l		LEAD				
	VSS			NICKEL				
	NH_3-N			ZINC			EPA METHOD 602	
X	TOTAL P	0.55 mg/l		SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

T. Wright 11-20-89

REMARKS:

1 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
Rochow	11/13/89 12:02 pm	T. Wright					

3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
	11/13/89 12:02 pm						

Form 1015

KALAMAZOO WATER RECLAMATION PLANT
INDUSTRIAL PRETREATMENT SAMPLES
D.O. & B.O.D.

APC 1

Test Date	Sample Source	ML.	Bott. No.	I.D.O. mg/L (B)	F.D.O.$_5$ mg/L (C)	D.O. Depletion (B-C = D)	Dilution Factor (300 – A = E)	B.O.D. mg/L (D x E)	Avg. B.O.D. mg/L	Remarks
11/11	Blank (Seeded)	0	66	8.5	8.2	0.3	—	0.3	0.3 RJG	
	APC1 31489	3	22	8.5	8.5	0.0	100	—	—	Due Date 11-16-89
	20:1 Dilution	10	36	8.5	7.9	0.6	30	—	—	Sample Date 11-10-89
		30	602	8.5	5.5	3.0	10	600	600	Test Date 11-11-89
		75	4	8.5	0.6	7.9	4	—	—	NN / RJG

Test Date	Sample Source	ML.	Bott. No.							Remarks
11/12	Blank (Seeded)	0	72	8.6	8.1	0.5	~~0.5~~ RJG	0.5	0.5	
	APC 1 31589	3	145	8.6	8.1	0.5	100	—	—	Due Date 11-17-89
	20:1 Dilution	10	115	8.6	7.8	0.8	30	—	—	Sample Date 11-11-89
	Adjusted pH	30	5	8.6	7.0	1.6	10	—	—	Test Date 11-12-89
between 7.0 & 9.0 NN		75	38	8.6	4.9	~~3.7~~ 3.7 RJG	4	296	296	NN / RJG

Test Date	Sample Source	ML.	Bott. No.							Remarks
11/13	Blank (Seeded)	0	101	8.4	7.9	0.5	—			
	APC1 31689	3	130	8.4	7.8	0.6	100	—	—	Due Date 11-18-89
	20:1 Dilution	10	17	8.4	7.5	0.9	30	—	—	Sample Date 11-12-89
		30	310	8.4	6.4	2.0	10	400	—	Test Date 11-13-89
		75	96	8.4	4.1	4.3	4	344	372	RJG / JS

Test Date	Sample Source	ML.	Bott. No.							Remarks
11/14	Blank (Seeded)	0	361	8.3	7.6	0.7	—			
	APC131789	3	60	8.2	7.2	1.0	100	—	—	Due Date 11-19-89
	20:1 Dilution	10	154	8.2	7.0	1.2	30	—	—	Sample Date 11-13-89
		30	162	8.2	6.2	2.0	10	400	-	Test Date 11-14-89
		75	371	8.2	3.3	4.9	4	392	396	RJG / JS

Form 1118 6/30/89

SUSPENDED SOLIDS ANALYSIS

no solids run on APC1 315. GNS

SAMPLE ID		APC # 31489							
DISH	D.F.	A11	2	S	2				
WT.DISH&SOL.		251164		~~250871~~ 250826					
WT.DISH		251125		~~251~~ JS					
MG/L SOL		78	39	90	45	avg = 84			
WT.DISH&SOL.		251164		250871					
WT.DISH&ASH		251157		250864					
MG/L VOL.SOL.		14	7	14	7	avg = 14			

Analyst JS

Date Analyzed 11-13-89

TSS only

SAMPLE ID		APC1 316							
DISH	D.F.	⊖	2	5x	2				
WT.DISH&SOL.		247034		251381					
WT.DISH		247023		251366					
MG/L SOL		18	9	30	15	avg = 24			
WT.DISH&SOL.		247034		251381					
~~WT.DISH&ASH~~									
MG/L VOL.SOL.									

Analyst JS

Date Analyzed 11-15-89

See next sheet.

SAMPLE ID		APC1 31789							
DISH	D.F.	fix	2	hot	2	Bl	1	=	1
WT.DISH&SOL.		248159		231896		227369		238415	
WT.DISH		248159		231895		227351		238402	
MG/L SOL		0	0	2	1	18	18	13	13
WT.DISH&SOL.				231895 ~~231905~~		JS 227369		238415	
WT.DISH&ASH		ashed larger than dried!!		231905		227359		238412	
MG/L VOL.SOL.						10	10	3	3

avg = 15.5 (TW)

~~avg = 6.5~~

Analyst JS

Date Analyzed 11-14-89

re-run with larger sample. JS

SUSPENDED SOLIDS ANALYSIS

SAMPLE ID		APC1316							
DISH	D.F.	we	1	Jul	1				
WT.DISH&SOL.		227265		251961					
WT.DISH		227243		251937					
MG/L SOL		22	22	24	24	23			
WT.DISH&SOL.		227265		251961					
WT.DISH&ASH		227251		251947					
MG/L VOL.SOL.		14	14	14	14	14			

Analyst 55

Date Analyzed 11-17-89

TW

SAMPLE ID									
DISH	D.F.								
WT.DISH&SOL.									
WT.DISH									
MG/L SOL									
WT.DISH&SOL.									
WT.DISH&ASH									
MG/L VOL.SOL.									

Analyst_____

Date Analyzed____

SAMPLE ID									
DISH	D.F.								
WT.DISH&SOL.									
WT.DISH									
MG/L SOL									
WT.DISH&SOL.									
WT.DISH&ASH									
MG/L VOL.SOL.									

Analyst_____

Date Analyzed____

SAMPLING RESULTS FROM PERFORMANCE PAPER FROM 3/21/90

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	0.286		mg/l	03/21/90	GRAB	09:10 AM
Mean	0.286					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	0.000	*	mg/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CADMIUM	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	383.000		mg/l	03/21/90	GRAB	09:10 AM
Mean	383.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	25.000		ug/l	03/21/90	GRAB	09:10 AM
Mean	25.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CYANIDES	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
LEAD	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

* indicates test results below detection limits

SAMPLING RESULTS FROM PERFORMANCE PAPER FROM 3/21/90

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
MERCURY	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
NICKEL	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	0.000	*	mg/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	03/21/90	GRAB	09:10 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	9.600		mg/l	03/21/90	GRAB	09:10 AM
Mean	9.600					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	65.000		mg/l	03/21/90	GRAB	09:10 AM
Mean	65.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	20.000		mg/l	03/21/90	GRAB	09:10 AM
Mean	20.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	21.000		ug/l	03/21/90	GRAB	09:10 AM
Mean	21.000					

* indicates test results below detection limits

SAMPLING RESULTS FROM PERFORMANCE PAPER FROM 3/21/90

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
pH	7.300		S.U.	03/21/90	GRAB	09:10 AM
Mean	7.300					

* indicates test results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 5842

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Compliance monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 08090	Three - 1L	3/21/90	9:10 AM		H	Clarifier / slightly cloudy, few solids / conv metals G&O
2.	Allied Paper	APC 08090	One - 500ml	3/21/90	9:10 AM		H	" / " " / CN-

GENERAL/CONVENTIONAL		RESULT	TRACE METALS (JN)		RESULT (mg/L)	ORGANIC COMPOUNDS	RESULT
X	pH	7.3 ~~DSH~~	X	CADMIUM	<0.5		EPA METHOD 601
X	BOD	<160 mg/l	X	TOTAL CHROMIUM	<20		
~~X~~	CBOD			HEX. CHROME	—		
X	COD	383 mg/l	X	COPPER	25		
X	TSS	65.0 mg/l	X	LEAD	<5.0		
X	VSS	20.0 mg/l	X	NICKEL	<50		
X	NH_3-N	0.286 mg/l	X	ZINC	21		EPA METHOD 602
X	TOTAL P	9.60 mg/l	X	SILVER	<0.5		
	ORTHO P		X	MERCURY	<0.5		
X	GREASE/OIL	0 mg/l		BERYLLIUM			
	CHLORIDE			BARIUM			
X	CN - TOTAL	<2.50 ppb					
	CN - AMENABLE					OTHER	

4/12/90

REMARKS:

Fined 3-22-90 RM

1 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 3/21/90 11:40 AM	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

T. Wright 4-3-90

KALAMAZOO WATER RECLAMATION PLANT
INDUSTRIAL PRETREATMENT SAMPLES
D.O. & B.O.D.

Test Date	Sample Source	ML.	Bott. No.	I.D.O. mg/L (B)	F.D.O.5 mg/L (C)	D.O. Depletion (B-C = D)	Dilution Factor (300 ÷ A = E)	B.O.D. mg/L (D x E)	Avg. B.O.D. mg/L	Remarks
3/22	Blank (Seeded)	0	44	8.5	8.5	0.0	—	0.0	0.6	
	APC 080	3	112	8.9	8.8	0.2	100	—	—	Due Date 3/27/90
	20:1 Dilution	10	112 5	8.3	8.1	0.2	30	—	—	Sample Date 3/21/90
		30	99	8.2	7.8	0.4	10	—	—	Test Date 3/22/90
		75	20	8.2	7.3	0.9	4	<20	<16	4/4/90

Test Date	Sample Source	ML.	Bott. No.							Remarks
	Blank (Seeded)	0								
		3								Due Date
	20:1 Dilution	10								Sample Date
		30								Test Date
		75								

Test Date	Sample Source	ML.	Bott. No.							Remarks
	Blank (Seeded)	0								
		3								Due Date
	20:1 Dilution	10								Sample Date
		30								Test Date
		75								

Test Date	Sample Source	ML.	Bott. No.							Remarks
	Blank (Seeded)	0								
		3								Due Date
	20:1 Dilution	10								Sample Date
		30								Test Date
		75								

Form 1118 6/30/89

HPC080

SAMPLE ID								
DISH	D.F.	5X	2			4g	2		
WT.DISH&SOL.		251360				250053		
WT.DISH		251334				250020		
MG/L SOL		64	32	65		66	33		
WT.DISH&SOL.		251366				250053		
WT.DISH&ASH		251356				250043		
MG/L VOL.SOL.		20	10	20		20	10		

Analyst ST

Date Analyzed 3/22/90

TW

SAMPLE ID								
DISH	D.F.								
WT.DISH&SOL.								
WT.DISH								
MG/L SOL								
WT.DISH&SOL.								
WT.DISH&ASH								
MG/L VOL.SOL.								

Analyst_____

Date Analyzed____

SAMPLE ID								
DISH	D.F.								
WT.DISH&SOL.								
WT.DISH								
MG/L SOL								
WT.DISH&SOL.								
WT.DISH&ASH								
MG/L VOL.SOL.								

Analyst_____

Date Analyzed____

GREASE AND OIL, FREON EXTRACTION
Gravimetric Method

Date Analyzed 3-26-90 Sample ID # APC08090

Analyst JS

Gms. Flask+Residue	128.0536			
Gms. Flask T	128.0536			
Gms. G & O	Ø	X 1000	= Ø	Mgs.
Sample Volume in mLs	950	÷ 1000	= .950	L.
Mgs/Volume in L.	Ø/.950	= 0.0	mg/L G & O	

TW

Date Analyzed _____ Sample ID # _____

Analyst _____

Gms. Flask+Residue				
Gms. Flask				
Gms. G & O		X 1000	=	Mgs.
Sample Volume in mLs		÷ 1000	=	L.
Mgs/Volume in L.		=	mg/L G & O	

Date Analyzed _____ Sample ID # _____

Analyst _____

Gms. Flask+Residue				
Gms. Flask				
Gms. G & O		X 1000	=	Mgs.
Sample Volume in mLs		÷ 1000	=	L.
Mgs/Volume in L.		=	mg/L G & O	

[illegible] PARTS FROM [illegible]

[illegible]	VALUE	Units	Sample Date	Sample Type	Sample Time
[illegible]	[illegible] 000	mg/l	08/08/89	24 HR COMP	08 [illegible] AM
	[illegible] 000	mg/l	08/09/89	24 HR COMP	09 30 AM
	250 000	mg/l	08/10/89	24 HR COMP	09 40 AM
	255 000	mg/l	08/11/89	24 HR. COMP	09 30 AM
[illegible]	307 500				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
[illegible]	478.000	mg/l	08/08/89	24 HR COMP	08:35 AM
	492 000	mg/l	08/09/89	24 HR. COMP	09:30 AM
	485.000	mg/l	08/10/89	24 HR. COMP	09 40 AM
	458 000	mg/l	08/11/89	24 HR. COMP	09.30 AM
[illegible]	478.250				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
[illegible] & GREASE	546 000	mg/l	08/08/89	GRAB	08 35 AM
	487.000	mg/l	08/10/89	GRAB	09:40 AM
[illegible]	516 500				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.680	mg/l	08/08/89	24 HR. COMP	08 35 AM
	0.550	mg/l	08/09/89	24 HR. COMP	09:30 AM
	0.800	mg/l	08/10/89	24 HR COMP	09:40 AM
	0.330	mg/l	08/11/89	24 HR. COMP	09:30 AM
[illegible]	0.590				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS SOLIDS	133.000	mg/l	08/08/89	24 HR. COMP	08:35 AM
	22.000	mg/l	08/09/89	24 HR. COMP	09:30 AM
	40 000	mg/l	08/10/89	24 HR COMP	09.40 AM
	22.000	mg/l	08/11/89	24 HR. COMP	09 30 AM
[illegible]	54 250				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS SOLIDS	29.000	mg/l	08/08/89	24 HR COMP	08 35 AM
	20.000	mg/l	08/09/89	24 HR COMP	09 30 AM
	30 000	mg/l	08/10/89	24 HR COMP	09 40 AM
	11 000	mg/l	08/11/89	24 HR COMP	09 30 AM
[illegible]	2[illegible] 500				

[illegible] test results below detection limits

[illegible] PERFORM [illegible] PAPER FROM 2/8/89 TO [illegible]

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
pH	10.700	S.U.	08/08/89	GRAB	08:35 AM
	6.400	S.U	08/09/89	GRAB	09:30 AM
	6.600	S.U.	08/10/89	GRAB	09:40 AM
	6.600	S.U	08/11/89	GRAB	09:30 AM
Mean	7.575				

Indicates test results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling Daily Route

№ 4700

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 22089	ONE - 1L	8/8/89	8:35AM	24 A		METER. / STA. / CLOUDY / COAL.
2	PERFORMANCE PAPERS	APC 22089	ONE - 1L	8/8/89	8:35AM		#	" / CLOUDY / G&O

GENERAL/CONVENTIONAL		RESULT (COMP / GRAB)	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
X	pH	7.1 / 10.7 ~~DGH~~	CADMIUM		EPA METHOD 601	
X	BOD	350 mg/l	TOTAL CHROMIUM			
	CBOD		HEX. CHROME			
X	COD	478 mg/l	COPPER			
X	TSS	133 mg/l	LEAD			
X	VSS	29 mg/l	NICKEL			
	NH_3-N		ZINC		EPA METHOD 602	
X	TOTAL P	0.68 ppm	SILVER			
	ORTHO P		MERCURY			
X	GREASE/OIL	546 mg/l	BERYLLIUM			
	CHLORIDE		BARIUM			
	CN - TOTAL					
	CN - AMENABLE	8/26/89 PA			OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
D.S. Hale	8/8/89 11:30	Dave Taylor	8/8/89 11:30								

LIMS

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 4707

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS (ALLIED)	APC 22189	ONE - 1L	8/9/89	9:30 A/M	24 A		METER. / CLOUDY, NORMAL / COND. STA. / SOLIDS

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.1	6.4	DGH
X	BOD	375 mg/l		
	CBOD			
X	COD	492 mg/l		
X	TSS	22 mg/l		
X	VSS	20 mg/l		
	NH_3-N			
X	TOTAL P	0.55 ppm		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE	8/26/89 RJ		
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS	RESULT
CADMIUM	
TOTAL CHROMIUM	
HEX. CHROME	
COPPER	
LEAD	
NICKEL	
ZINC	
SILVER	
MERCURY	
BERYLLIUM	
BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1	2	3	4
RELINQUISHED BY: (Signature) D.S. Hale	RELINQUISHED BY: (Signature)	RELINQUISHED BY: (Signature)	RELINQUISHED BY: (Signature)
DATE/TIME 8/9/89 10:50 AM	DATE/TIME	DATE/TIME 8/9/89 10:50 AM	DATE/TIME
RECEIVED BY: (Signature) Gary Taylor	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 8/9/89 10:50 AM	DATE/TIME	DATE/TIME	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling Route Daily

№ 4718

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 22289	ONE - 1L	8/10/89	9:40AM	24 A		METER. STA. / CLOUDY / CONV.
2.	PERFORMANCE PAPERS	APC 22289	ONE - 1L	8/10/89	9:40AM		H	" / CLOUDY / G&O

GENERAL/CONVENTIONAL		RESULT COMP GRAB
X	pH	7.2 6.6 DSH
X	BOD	250 mg/l
	CBOD	
X	COD	485 mg/l
X	TSS	40 mg/l
X	VSS	30 mg/l
	NH_3-N	
X	TOTAL P	0.80 ppm
	ORTHO P	
X	GREASE/OIL	487 mg/l
	CHLORIDE	
	CN - TOTAL	8/26/89
	CN - AMENABLE	RT

TRACE METALS	RESULT
CADMIUM	
TOTAL CHROMIUM	
HEX. CHROME	
COPPER	
LEAD	
NICKEL	
ZINC	
SILVER	
MERCURY	
BERYLLIUM	
BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

Lims

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 8/10/89 1:30 PM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Jay Taylor	DATE/TIME 8/10/89 1:30 PM
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Routt

№ 4731

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 22389	ONE - 1L	8/11/89	9:30AM	24 A		METER. / CLOUDY, NORMAL / COND. STA. / SOLIDS

GENERAL/CONVENTIONAL		RESULT (COMP / GRAB)	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
X	pH	7.1 / 6.6 DSH		CADMIUM			EPA METHOD 601	
X	BOD	255 mg/l		TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	458 mg/l		COPPER				
X	TSS	22 mg/l		LEAD				
X	VSS	11 mg/l		NICKEL				
	NH_3-N			ZINC			EPA METHOD 602	
X	TOTAL P	0.33 ppm		SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL	8/26/89 PG		BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS: Lims

1 RELINQUISHED BY: (Signature)	DATE/TIME	2 RELINQUISHED BY: (Signature)	DATE/TIME	3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
D.S. Hale	8/11/89 11:35 AM						

RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
D. Jerry	8/11/89 11:35 AM						

Form 1015

GREASE / OIL
Partition Gravimetric Method

DATE ANALYZED 8-22-85 SAMPLE NO. APC 22089

ANALYST P.T.

Weight of flask + residue	127.4870
- " of flask T	127.0506
1,000x g Grease/Oil	.4364 436.4
÷ l. sample 800	
= mg/l Grease/Oil	~~.546~~ .546 545.5

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

SAMPLING RESULTS FOR PERFORMANCE PAPERS 06/20/89-06/23/8.

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	210.000		mg/l	06/23/89	24 HR COMP	08:55 AM
Mean	172.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	34.000		ug/l	06/20/89	24 HR COMP	08:35 AM
	20.000		ug/l	06/21/89	24 HR COMP	08:45 AM
	22.000		ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	19.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CYANIDES	9.740		ug/l	06/20/89	GRAB	08:35 AM
	6.820		ug/l	06/21/89	GRAB	08:45 AM
	5.520		ug/l	06/22/89	GRAB	09:30 AM
	5.520		ug/l	06/23/89	GRAB	08:55 AM
Mean	6.900					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
DICHLOROBROMOMETHANE	8.100		ug/l	06/21/89	GRAB	08:45 AM
Mean	8.100					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
LEAD	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
MERCURY	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.500		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.125					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
NICKEL	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM

* indicates test results below detection limits

SAMPLING RESULTS FOR PERFORMA..E PAPERS 06/20/89-06/23/8_

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1,2-DICHLOROPROPANE	4.200		ug/l	06/21/89	GRAB	08:45 AM
Mean	4.200					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1-1-1-TRICHLOROETHAN	9.300		ug/l	06/21/89	GRAB	08:45 AM
Mean	9.300					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	0.000	*	mg/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	mg/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	mg/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	mg/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	120.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	250.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	130.000		mg/l	06/22/89	24 HR COMP	09:30 AM
Mean	166.667					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CADMIUM	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	1.200		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.460		ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.415					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	142.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	164.000		mg/l	06/22/89	24 HR COMP	09:30 AM

* indicates test results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 4443

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPER	APC 17189	TWO - 1L	6/20/89	8:35 A/M	24 A		METER, CLOUDY, NORMAL STA./SOLIDS / conv/metals
2	PERFORMANCE PAPER	APC 17189	ONE - 1L	6/20/89	8:35 A/M		H	" / " " / G&D
3	PERFORMANCE PAPER	APC 17189	ONE - 1L	6/20/89	8:35 A/M		H	" / " " / CN-

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.1	7.4	DSH
X	BOD			120 mg/l
	CBOD			
X	COD			—
X	TSS			33 mg/l
X	VSS			14 mg/l
X	NH_3-N			<1.00 mg/l
X	TOTAL P			0.44 mg/l
	ORTHO P			
X	GREASE/OIL			1.14 mg/l
	CHLORIDE			
X	CN - TOTAL			9.74 ppb
	CN - AMENABLE			

TRACE METALS		RESULT µg/L
X	CADMIUM	<0.20
X	TOTAL CHROMIUM	<2.0
	HEX. CHROME	—
X	COPPER	34
X	LEAD	<10
X	NICKEL	<5.0
X	ZINC	32
	SILVER	—
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	

M. Kerr
8/14/89

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 6/20/89 11:40 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) S. Terry	DATE/TIME 6/20/89 11:40 A/M
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 4451

SAMPLERS: (Signature) Steven M. Rochow, Donald S. Hale

PURPOSE OF ANALYSIS: compliance monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 17289	TWO - 40 mL.	6/21/89	8:45 AM		H	METERING STATION / CLOUDY, FEW SOLIDS / VOC'S

GENERAL/CONVENTIONAL	RESULT	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
	pH		CADMIUM		EPA METHOD 601
	BOD		TOTAL CHROMIUM		
	CBOD		HEX. CHROME		
	COD		COPPER		
	TSS		LEAD		
	VSS		NICKEL		
	NH_3-N		ZINC		EPA METHOD 602
	TOTAL P		SILVER		
	ORTHO P		MERCURY		
	GREASE/OIL		BERYLLIUM		
	CHLORIDE		BARIUM		
	CN - TOTAL				
	CN - AMENABLE			X	OTHER DNR SCANS 1&2

REMARKS: SENT TO K.A.R. LABS 6/22/89.

1 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	3 RELINQUISHED BY: (Signature)	DATE/TIME	DATE/TIME
Rochow	6/22/89 2:18 pm	C. Cook KAR	6/22/89 1:19 pm			
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME	DATE/TIME

Form 1015

891206 MCK 6/22/89

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling Daily Route

№ 4450

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 17289	TWO - 1L	6/21/89	8:45 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / metals conv.
2	PERFORMANCE PAPERS	APC 17289	ONE - 1L	6/21/89	8:45 A/M		H	" / " " / G&O
3	PERFORMANCE PAPERS	APC 17289	ONE - 1L	6/21/89	8:45 A/M		H	" / " " / CN -

	GENERAL/CONVENTIONAL	CDMP	GRAB	RESULT
X	pH	6.0	~~6.0~~ 6.7	DSH
X	BOD			250 mg/l
	CBOD			
X	COD			142 mg/l
X	TSS			21 mg/l
X	VSS			≤1 mg/l
X	NH_3-N			≤1.00 mg/l
X	TOTAL P			0.34 mg/l
	ORTHO P			
X	GREASE/OIL			2.90 mg/l
	CHLORIDE			
X	CN - TOTAL			6.82 ppb
	CN - AMENABLE			

	TRACE METALS	RESULT µg/L
X	CADMIUM	1.2
X	TOTAL CHROMIUM	<2.0
	HEX. CHROME	—
X	COPPER	20
X	LEAD	<10
X	NICKEL	<5.0
X	ZINC	12
	SILVER	—
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	

	ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 6/21/89 11:45 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) D. Terry	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 4459

SAMPLERS: (Signature) Steven M. Rochon

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 17389	TWO - 1L	6/22/89	9:30AM	24 A		METER STA. / Cloudy few solids / CONV. metals
2	PERFORMANCE PAPERS	APC 17389	ONE - 1L	6/22/89	9:30AM		H	" / Cloudy few Solids / CN-
~~4~~ 3	Performance Papers	APC 17389	ONE - 1L	6/22/89	9:30AM		H	" / Cloudy few Solids / G&O

	GENERAL/CONVENTIONAL	RESULT (COMP / GRAB)		TRACE METALS	RESULT µg/L		ORGANIC COMPOUNDS	RESULT
X	pH	7.1 / 7.3 SR	X	CADMIUM	0.46		EPA METHOD 601	
X	BOD	130 mg/l	X	TOTAL CHROMIUM	<2.0			
	CBOD			HEX. CHROME	—			
X	COD	164 mg/l	X	COPPER	22			
X	TSS	22 mg/l	X	LEAD	<10			
X	VSS	11 mg/l	X	NICKEL	<5.0			
X	NH_3-N	≤1.00 mg/l	X	ZINC	<10		EPA METHOD 602	
X	TOTAL P	0.48 mg		SILVER	—			
	ORTHO P		X	MERCURY	<0.50			
	GREASE/OIL	4.70 mg/L		BERYLLIUM				
	CHLORIDE			BARIUM				
X	CN - TOTAL	5.52 ppb		8/14/89				
	CN - AMENABLE						OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	6/22/89 1:07 PM	DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME	6/22/89 1:07 pm	DATE/TIME	
1 RELINQUISHED BY: (Signature)	Rochon	2 RELINQUISHED BY: (Signature)	

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 4466

SAMPLERS: (Signature) Steven M. Rockow

PURPOSE OF ANALYSIS: "Quarterly" Compliance Monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Performance PAPER	APC17489	1-one liter	6/23/89	8:55AM	24A		Meter. STA. / Cloudy Normal Solid / CONV
2.	Performance PAPER	APC17489	1-one liter	6/23/89	8:55AM	24A		" / " / METALS
3	Performance PAPER	APC17489	1-one liter	6/23/89	8:55AM		H	" / " / -CN

GENERAL/CONVENTIONAL		RESULT Comp/Grab	TRACE METALS		RESULT µg/L	ORGANIC COMPOUNDS	RESULT
✓	pH	8.5 / 10.3	✓	CADMIUM	<0.20	EPA METHOD 601	
✓	BOD	(*)	✓	TOTAL CHROMIUM	<2.0		
	CBOD			HEX. CHROME	—		
✓	COD	210 mg/L	✓	COPPER	<20		
✓	TSS	21.0 mg/L	✓	LEAD	<10		
✓	VSS	11.0 mg/L	✓	NICKEL	<5.0		
✓	NH_3-N	<1.00 mg/L	✓	ZINC	<10	EPA METHOD 602	
✓	TOTAL P	0.18 ppm		SILVER	—		
	ORTHO P		✓	MERCURY	<0.50		
	GREASE/OIL			BERYLLIUM			
	CHLORIDE			BARIUM			
✓	CN - TOTAL	5.58 ppb		8/14/89			
	CN - AMENABLE					OTHER	

REMARKS: (*) No DATA - Water contamination

1 RELINQUISHED BY: (Signature) Rockow	DATE/TIME 6/23/89 12:19 pm	RECEIVED BY: (Signature) Williams	DATE/TIME 6/23/89 12:19 pm
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

GREASE / OIL
Partition Gravimetric Method

DATE ANALYZED 6/27/89 SAMPLE NO. APC 17189

ANALYST RM

Weight of flask + residue	102.6079
- " of flask K	102.6070
1,000x g Grease/Oil	.0009 0.9
÷ l. sample .790	
= mg/l Grease/Oil	1.14

DATE ANALYZED 7/6/89 SAMPLE NO. APC 17289

ANALYST RM

Weight of flask + residue	129.7015
- " of flask Q	129.6986
1,000x g Grease/Oil	.0029 2.9
÷ l. sample .780	
= mg/l Grease/Oil	3.72

DATE ANALYZED 7/6/89 SAMPLE NO. APC 17389

ANALYST RM

Weight of flask + residue	127.2408
- " of flask Blank	127.2361
1,000x g Grease/Oil	.0047 4.7
÷ l. sample .780	
= mg/l Grease/Oil	6.02

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: COMPLIANCE MONITORING

№ 4342

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPERS	APC 14689(a)	1 350 ML	5/26/89	5:10 PM - 6:40 PM	2HR SEQ		MONITORING MANHOLE / NORM SOLIDS / % TOTAL SOLIDS
2	PERFORMANCE PAPERS	APC 14789(a)	1 350 ML	5/27/89	11:10AM - 12:40 PM	2 HR SEQ		MONITORING MANHOLE / BLWISH SOLIDS / % TOTAL SOLIDS
3	PERFORMANCE PAPERS	APC 14789(b)	1 350 ML	5/27/89	9:10 PM - 10:40 PM	2HR SEQ		MONITORING MANHOLE / BLACK SOLIDS / % TOTAL SOLIDS

GENERAL/CONVENTIONAL		RESULT 14689(a)	14789(a)	14789(b)
	pH	6.4	11.7	7.8
	BOD			
	CBOD			
	COD			
✓	TSS			
	VSS			
	NH_3-N			
	TOTAL P			
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
	COPPER	
	LEAD	
	NICKEL	
	ZINC	
	SILVER	
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)	3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 5/27/89 2:20 pm	DATE/TIME	DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 5/27/89 2:20 PM	DATE/TIME	DATE/TIME	DATE/TIME
1 RELINQUISHED BY: (Signature)	2 RELINQUISHED BY: (Signature)	1 RELINQUISHED BY: (Signature)	2 RELINQUISHED BY: (Signature)

Form 1015

SUSPENDED SOLIDS ANALYSIS - INDUSTRIALS

APC 14689 (a)

SAMPLE SOURCE				
Dish No./D.F.	Xt x 2	ph x 2	x	x
Wt. Dish & Solids	260279	234862		
Wt. Dish	260265	234848	28	
MG./L. Solids	28 14	28 14		
Wt. Dish & Solids	260279	234862		
Wt. Dish & Ash	260269	234852		
MG./L. Vol. Solids	20 10	20 10	20	

Analyst ST

Date Ran 5-31-89

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SUSPENDED SOLIDS ANALYSIS - INDUSTRIALS

APC 14789(b)

SAMPLE SOURCE				
Dish No./D.P.	H* x 10	N* x 10	x	x
Wt. Dish & Solids	225021	241283		
Wt. Dish	224470	240743		
MG./L. Solids	551 5510	540 5400	5455	
Wt. Dish & Solids	225021	241283		
Wt. Dish & Ash	224837	241107		
MG./L. Vol. Solids	184 1840	176 1760	1800	

Analyst ST

Date Ran 5-31-89

SAMPLE SOURCE				
Dish No./D.P.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SAMPLE SOURCE				
Dish No./D.P.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SUSPENDED SOLIDS ANALYSIS - INDUSTRIES

APC 1478a(a)

SAMPLE SOURCE				
Dish No./D.F.	F 20 x 5	aa 20 x	x	x
Wt. Dish & Solids	253639	249047		
Wt. Dish	253133	248536	10170	
MG./L. Solids	506 10,120	511 10220		
Wt. Dish & Solids	253639	249047		
Wt. Dish & Ash	253399	248798	4890	
MG./L. Vol. Solids	240 4800	249 4980		

Analyst ST

Date Ran 5-31-89

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
1 DICHLOROETHANE	20.000	ug/l	03/07/89	GRAB	
	13.000	ug/l	03/08/89	GRAB	
Mean	16.000				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
AMMONIA NITROGEN	1.320	mg/l	03/07/89	24 HR COMP	08:30 AM
	1.430	mg/l	03/08/89	24 HR COMP	08:30 AM
	1.320	mg/l	03/09/89	24 HR COMP	08:25 AM
	2.500	mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	1.642				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
[illegible]	100.000	mg/l	03/07/89	24 HR COMP	08:30 AM
	110.000	mg/l	03/08/89	24 HR COMP	08:30 AM
	105.000	mg/l	03/09/89	24 HR COMP	08:25 AM
	195.000	mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	127.500				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
CADMIUM	0.180	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000 *	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.180	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.100	ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0.115				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
CHLOROFORM	3.600	ug/l	03/07/89	GRAB	
	3.700	ug/l	03/08/89	GRAB	
Mean	3.650				

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000 *	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000 *	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000 *	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000 *	ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0.000				

[illegible] flow [illegible]

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]	1[illegible] 000		mg/l	03/0[illegible]/89	24 HR COMP	08:30 AM
	15[illegible] 000		mg/l	03/08/89	24 HR COMP	08:30 AM
	187 000		mg/l	03/09/89	24 HR COMP	08:25 AM
	321 000		mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	204 500					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	32.000		ug/l	03/07/89	24 HR COMP	08:30 AM
	30.000		ug/l	03/08/89	24 HR COMP	08:30 AM
	38.000		ug/l	03/09/89	24 HR COMP	08:25 AM
	26.000		ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	31 500					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
[illegible]ANTUE[illegible]	6.220		ug/l	03/07/89	GRAB	08:30 AM
	3 330		ug/l	03/08/89	GRAB	08:30 AM
	3 330		ug/l	03/09/89	GRAB	08:25 AM
	5.580		ug/l	03/10/89	GRAB	09:05 AM
Mean	4.615					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
LEAD	3.800		ug/l	03/07/89	24 HR COMP	08:30 AM
	2.900		ug/l	03/08/89	24 HR COMP	08:30 AM
	3.200		ug/l	03/09/89	24 HR COMP	08:25 AM
	3.200		ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	3.275					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
MERCURY	0 000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0 000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0 000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
NICKEL	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0 000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0 000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0 000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0 000					

[illegible]

Parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
[illegible] GREASE	4.810		mg/l	03/07/89	GRAB	08:30 AM
	2.820		mg/l	03/09/89	GRAB	08:25 AM
Mean	3.815					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0.000					

Parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.390		mg/l	03/07/89	24 HR COMP	08:30 AM
	0.700		mg/l	03/08/89	24 HR COMP	08:30 AM
	0.340		mg/l	03/09/89	24 HR COMP	08:25 AM
	0.330		mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	0.440					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	58.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	28.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	20.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	22.000		mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	32.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	16.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	10.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	8.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	22.000		mg/l	03/10/89	24 HR COMP	09:05 AM
Mean	14.000					

Parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000		ug/l	03/10/89	24 HR COMP	09:05 AM
Mean	0.000					

[illegible] results [illegible] detection limit

[illegible] FROM [illegible] TO [illegible]

Parameter	VALUE	Units	Sample Date	Sample Type	Sample Time
	7.900	S.U	03/07/89	GRAB	08:30 AM
	7.400	S.U.	03/08/89	GRAB	08:30 AM
	7.300	S.U.	03/09/89	GRAB	08:25 AM
	7.200	S.U.	03/10/89	GRAB	09:05 AM
Mean	7.450				

[illegible] results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Cal Longcore

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Report

№ 4036

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPER	APC 060689	3-1L	3/7/89	8:30 AM	24 A		METER STA. / Cloudy / Conv. metals CN-
2	PERFORMANCE PAPER	APC 060689	1-1L	3/7/89	8:30 AM		H	" / Cloudy / G&O

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.4	7.9	
X	BOD			100 mg/L
	CBOD			—
X	COD			152 mg/L (avg of 2)
X	TSS			58 mg/L.
X	VSS			16 mg/L.
X	NH_3-N			1.32 mg/L
X	TOTAL P			0.39 mg/L
	ORTHO P			—
X	GREASE/OIL			4.8 mg/L
	CHLORIDE			—
X	CN - TOTAL			6.22 µg/L
	CN - AMENABLE			—

TRACE METALS		RESULT µg/L
X	CADMIUM	0.18
X	TOTAL CHROMIUM	<25
	HEX. CHROME	—
X	COPPER	32
X	LEAD	3.8
X	NICKEL	<50
X	ZINC	<10
X	SILVER	<0.50
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601
	EPA METHOD 602
	OTHER

REMARKS: 3/7/89 11/21/89

1 RELINQUISHED BY: (Signature) Cal Longcore	DATE/TIME 3/7/89 11:30 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 4039

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPER (ALLIED)	APC 06789	3-1L	3/8/89	8:30 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / COMP metals CN-

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.1	7.4	DSH
X	BOD	110 mg/L		
	CBOD	—		
X	COD	158 mg/L (avg of dup)		
X	TSS	28 mg/L		
X	VSS	108 mg/L		
X	NH_3-N	1.43 mg/L ppm		
X	TOTAL P	0.70 mg/L		
	ORTHO P	—		
	GREASE/OIL	—		
	CHLORIDE	—		
X	CN - TOTAL	3.33 mg/L		
	CN - AMENABLE	—		

TRACE METALS		RESULT µg/L
X	CADMIUM	<0.10
X	TOTAL CHROMIUM	<25
	HEX. CHROME	—
X	COPPER	30
X	LEAD	2.9
X	NICKEL	<50
X	ZINC	<10
X	SILVER	<0.50
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	

4/21/89
M. Camp

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS: Dj (3-9-89)

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 3/8/89 11:30 A/M	RECEIVED BY: (Signature) Karen Bronson	DATE/TIME 3/8/89 11:30 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Cal Longcore

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 4043

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPER (ALLIED)	APC 016889	3-1L	3/9/89	8:25 AM	24 A		METER. STA. / cloudy / conf metals CN-
2	PERFORMANCE PAPER (ALLIED)	APC 016889	1-1L	3/9/89	8:25 AM		H	" / " / G&O

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.6	7.3	
X	BOD			105 mg/L
	CBOD			—
X	COD			187 mg/L (avg & dup.)
X	TSS			20 mg/L.
X	VSS			8 mg/L
X	NH_3-N			1.32 mg/L ppm
X	TOTAL P			0.34 mg/L
	ORTHO P			—
X	GREASE/OIL			2.82 mg/L
	CHLORIDE			—
X	CN - TOTAL			3.33 mg/L
	CN - AMENABLE			—

TRACE METALS		RESULT µg/L
X	CADMIUM	0.18
X	TOTAL CHROMIUM	<25
	HEX. CHROME	
X	COPPER	38
X	LEAD	3.2
X	NICKEL	<50.
X	ZINC	<10
X	SILVER	<0.50
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS: 3/9/89

4/21/89

1 RELINQUISHED BY: (Signature) Cal Longcore	DATE/TIME 3/9/89 11:45 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 3/9/89 11:45 AM
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 4050

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	PERFORMANCE PAPER (ALLIED)	APC 06989	3-1L	3/10/89	9:05 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / conv metals CN-

GENERAL/CONVENTIONAL		RESULT COMP GRAB
X	pH	6.9 7.2 DSH
X	BOD	195 mg/L
	CBOD	—
X	COD	321 mg/L (avg. of dup)
X	TSS	22 mg/L
X	VSS	22 mg/L
X	NH_3-N	2.50 mg/L
X	TOTAL P	0.33 ppm ~~mg/L~~ ne
	ORTHO P	—
	GREASE/OIL	—
	CHLORIDE	—
X	CN - TOTAL	5.58 mg/L
	CN - AMENABLE	—

TRACE METALS		RESULT µg/L
X	CADMIUM	0.10
X	TOTAL CHROMIUM	<25
	HEX. CHROME	
X	COPPER	26
X	LEAD	3.2
X	NICKEL	<50
X	ZINC	<10
X	SILVER	<0.50
X	MERCURY	<0.50
	BERYLLIUM	
	BARIUM	
		4/21/89
		[signature]

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS: [signature] 3/10/89

1 RELINQUISHED BY: (Signature) D. S. Hale	DATE/TIME 3/10/89 11:30 A/M	RECEIVED BY: (Signature) S. Terry	DATE/TIME 3/10/89 11:30 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

. SE / OIL
Partition - Gravimetric Method

HPC

DATE ANALYZED 3-13-89 SAMPLE NO. 06689

ANALYST ST

Weight of flask + residue	103 6017
- " of flask W	103.5978
1,000x g Grease/Oil	.0039 3.9
÷ l. sample .810	
= mg/l Grease/Oil	4.81

APC

DATE ANALYZED 3-13-89 SAMPLE NO. 06889

ANALYST ST

Weight of flask + residue	101 99 59
- " of flask Ni	101.9935
1,000x g Grease/Oil	.0024 2.4
÷ l. sample .850	
= mg/l Grease/Oil	2.82

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

DATE ANALYZED _____ SAMPLE NO. _____

ANALYST _____

Weight of flask + residue	
- " of flask	
1,000x g Grease/Oil	
÷ l. sample	
= mg/l Grease/Oil	

KAR Laboratories, Inc.
4425 Manchester Road
Kalamazoo, MI 49002

(616) 381-9666

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Bruce Merchant

Project No.:	890392
Client No.:	1098
Project Date:	3/08/89
Date Promised:	3/29/89
Date Reported:	3/15/89
PO#:	45285

Project Description: Analysis of 3 water samples

Sample: 890392-01 Performance Paper (Allied) APC 06689 Rec'd: 3/08/89

MDNR Scan 1 & 2 See attached

Sample: 890392-02 Performance Paper (Allied) APC 06789 Rec'd: 3/08/89

MDNR Scan 1 & 2 See attached

Sample: 890392-03 Bowers, BOW 06789, 3/8/89 Rec'd: 3/08/89

MDNR Scan 1 & 2 See attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma

William H. Bouma, Ph.D.
Director

WHB/crc

KAR Laboratories, Inc

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Bruce Merchant

Sample No.: 890392-01
Date Received: 3/08/89
Date Promised: 3/29/89
Date Reported: 3/15/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample Description: Performance Paper (Allied) APC 06689

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	3.6	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	20
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	ND	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	ND		

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	ND	m-and/or p-Xylene	ND
Ethyl benzene	ND	o-Xylene	ND
Toluene	ND		

Concentrations are expressed as ug/L
"ND" means not detected. The limit of detection was 1
for all compounds except Methylene chloride, which was 10 times higher.

KAR Laboratories, Inc.

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Attn: Mr. Bruce Merchant

Sample No.: 890392-02
Date Received: 3/08/89
Date Promised: 3/29/89
Date Reported: 3/15/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample Description: Performance Paper (Allied) APC 06789

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	3.7	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	18
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	ND	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	ND		

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	ND	m-and/or p-Xylene	ND
Ethyl benzene	ND	o-Xylene	ND
Toluene	ND		

Concentrations are expressed as ug/L
"ND" means not detected. The limit of detection was 1
for all compounds except Methylene chloride, which was 10 times higher.

SAMPLING RESULTS FOR PERFORMANCE PAPERS 11/29/88 - 12/02/88

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1-1-1-TRICHLOROETHAN	1.900		ug/l	12/01/88	GRAB	08:50 AM
Mean	1.900					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	1.780		mg/l	11/29/88	24 HR COMP	09:00 AM
	2.410		mg/l	11/30/88	24 HR COMP	09:20 AM
	2.930		mg/l	12/01/88	24 HR COMP	09:00 AM
	2.090		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	2.302					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	242.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	245.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	225.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	300.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	253.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHLOROFORM	4.500		ug/l	12/01/88	GRAB	08:50 AM
Mean	4.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	350.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	356.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	365.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	469.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	385.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM

* indicates test results below detection limits

SAMPLING RESULTS FOR PERFORMANCE PAPERS 11/29/88 - 12/02/88

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	32.000		ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	8.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CYANIDES	5.690		ug/l	11/29/88	24 HR COMP	09:00 AM
	7.540		ug/l	11/30/88	24 HR COMP	09:20 AM
	7.230		ug/l	12/01/88	24 HR COMP	09:00 AM
	7.230		ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	6.922					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.630		ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.157					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.160		mg/l	11/29/88	24 HR COMP	09:00 AM
	0.170		mg/l	11/30/88	24 HR COMP	09:20 AM
	0.140		mg/l	12/01/88	24 HR COMP	09:00 AM
	0.140		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.152					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	18.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	56.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	48.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	44.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	41.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	10.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	42.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	20.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	14.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	21.500					

* indicates test results below detection limits

SAMPLING RESULTS FOR PERFORMANCE PAPERS 11/29/88 - 12/02/88

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
pH	7.800		S.U.	11/29/88	GRAB	09:00 AM
	6.800		S.U.	11/30/88	GRAB	09:20 AM
	7.100		S.U.	12/01/88	GRAB	09:00 AM
	7.400		S.U.	12/02/88	GRAB	09:05 AM
Mean	7.275					

* indicates test results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3770

SAMPLERS: (Signature) Donald S. Hale, Robert Moncla

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 331688	3-1L	12/2/88	9:05 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / CONV. metals CN-

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.5	7.4	
X	BOD	300		
	CBOD			
X	COD	469		
X	TSS	44.0		
X	VSS	14.0		
X	NH_3-N	2.09		
X	TOTAL P	0.14		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
X	CN - TOTAL	7.23		
	CN - AMENABLE			

TRACE METALS		RESULT mg/L
	CADMIUM	
X	TOTAL CHROMIUM	<2.5
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D. S. Hale	DATE/TIME 12/2/88 11:40 A/M	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Jackie Taylor	DATE/TIME 12/2/88 11:40 A/M	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

Sample date 12-1-88

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Robert Monck

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 3761

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 33588	3-1L	12/1/88	9:00 AM	24		Meter. Sta. / / conv metals an-

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.2	7.1	~~DEA~~
X	BOD	225		
	CBOD			
X	COD	365		
X	TSS	48.0		
X	VSS	20.0		
X	NH_3-N	2.93		
X	TOTAL P	0.14		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
X	CN - TOTAL	7.23		
	CN - AMENABLE			

TRACE METALS		RESULT µg/L
	CADMIUM	
X	TOTAL CHROMIUM	<2.5
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D. S. Hale	DATE/TIME 12/1/88 11:45 AM	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Faye Taylor	DATE/TIME 12/1/88 11:45 AM	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
	DATE/TIME		DATE/TIME

Form 1015

Sample date 11-30-88

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3754

SAMPLERS: (Signature) Donald S. Hale, Robert Mann

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 33488	3-1L	11/30/88	9:20 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / COM metals CN-

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.1	6.8	DSH
X	BOD	245		
	CBOD			
X	COD	356		
X	TSS	56.0		
X	VSS	42.0		
X	NH_3-N	2.41		
X	TOTAL P	0.17		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
X	CN - TOTAL	7.54		
	CN - AMENABLE			

TRACE METALS		RESULT µg/L
	CADMIUM	
X	TOTAL CHROMIUM	<2.5
	HEX. CHROME	
X	COPPER	32
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	0.63
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 11/30/88 11:45 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME 11/30/88 11:45 A/M
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

Sample date 11-29-88

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Robert Monck

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 3744

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 33388	3-1L	11/29/88	9:00 AM	24 A		METER STA. / / conv metals CN

GENERAL/CONVENTIONAL		RESULT COMP	RESULT GRAB
X	pH	7.4	7.8
X	BOD	242	
	CBOD		
X	COD	356	
X	TSS	18.0	
X	VSS	10.0	
X	NH_3-N	1.78	
X	TOTAL P	0.16	
	ORTHO P		
	GREASE/OIL		
	CHLORIDE		
X	CN - TOTAL	5.69	
	CN - AMENABLE		

TRACE METALS		RESULT µg/L
	CADMIUM	
X	TOTAL CHROMIUM	<2.5
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10 ~~40~~ MK
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 11/29/88 11:35 AM
RECEIVED BY: (Signature) Dave Taylor	DATE/TIME 11/29/88 11:35 AM
3 RELINQUISHED BY: (Signature)	DATE/TIME 11/29/88 11:35 AM
RECEIVED BY: (Signature)	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

Sample date 11-28-88

KAR Laboratories, Inc

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 12/14/88
Date Received : 12/1/88
Laboratory Code: 882202-2

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 33688, 12/1/88 9:50 AM

SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Bromomethane	<1	cis-1,3-Dichloropropene	<1
Carbon Tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	<1	Methylene Chloride	<10
Chloroethane	<1	1,1,2,2-Tetrachloroethane	<1
Chloroform 44	4.5	Tetrachloroethene 33	<1
Chloromethane	<1	1,1,1-Trichloroethane	1.9
Dibromochloromethane	<1	1,1,2-Trichloroethane	<1
1,1-Dichloroethane	<1	Trichloroethene	<1
1,2-Dichloroethane	<1	Trichlorofluoromethane	<1
1,1-Dichloroethene	<1	Vinyl Chloride	<1
cis-1,2-Dichloroethene	<1		

SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Concentrations are expressed as ug/L.

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

KAR Laboratories, Inc

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 12/14/88
Date Received : 12/1/88
Laboratory Code: 882202-1

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Parchment Meter Sta., PAR 33688, 12/1/88 9:20 AM

SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	18
Bromomethane	<1	cis-1,3-Dichloropropene	<1
Carbon Tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	<1	Methylene Chloride	<10
Chloroethane	<1	1,1,2,2-Tetrachloroethane	<1
Chloroform	<1	Tetrachloroethene	<1
Chloromethane	<1	1,1,1-Trichloroethane	<1
Dibromochloromethane	<1	1,1,2-Trichloroethane	<1
1,1-Dichloroethane	<1	Trichloroethene	<1
1,2-Dichloroethane	<1	Trichlorofluoromethane	<1
1,1-Dichloroethene	<1	Vinyl Chloride	<1
cis-1,2-Dichloroethene	<1		

SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	2.9		

Concentrations are expressed as ug/L.

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

KAR Laboratories, Inc.

ANALYTICAL RESULTS

To: United Environmental Tech., Inc.

Project No: 910835
Report Date: 4/29/91

Project Desc.: Emergency analysis of aqueous sample from Allied Paper Proj.89-002-02.

Sample No.:910835-01 Sample type: aqueous Received on: 4/26/91
ID: "Clarifier discharge, 4/26/91, 2:40"

PCB, total	<0.1 ug/L
Cyanide, total	<0.02 mg/L
Cadmium, total	<0.005 mg/L
Chromium, total	<0.01 mg/L
Copper, total	0.02 mg/L
Lead, total	<0.05 mg/L
Mercury, total	<0.0005 mg/L
Nickel, total	0.04 mg/L
Zinc, total	0.03 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

Analytical Laboratory Report
City of Kalamazoo
FECL #: 6806-91-E1 et al.
May 28, 1991
Page Two

FECL #:	**6806-91-E1**
Tag:	1 Allied Clarifier APC 12391

Organic

PCB	<0.0001	mg/l

FECL #:	**6807-91-E1**		**6807-91-E2**	
Tag:	1 Borroughs BLS 12891		2 Borroughs BL3 12891	

Method 601 - Purgeable Halocarbons

Bromodichloromethane	<0:001	mg/l	<0.001	mg/l
Bromoform	<0.001	mg/l	<0.001	mg/l
Bromomethane	<0.001	mg/l	<0.001	mg/l
Carbon tetrachloride	<0.001	mg/l	<0.001	mg/l
Chlorobenzene	<0.001	mg/l	<0.001	mg/l
Chloroethane	<0.001	mg/l	<0.001	mg/l
2-Chloroethylvinyl ether	<0.001	mg/l	<0.001	mg/l
Chloroform	<0.001	mg/l	<0.001	mg/l
Chloromethane	<0.001	mg/l	<0.001	mg/l
Dibromochloromethane	<0.001	mg/l	<0.001	mg/l
1,2-Dichlorobenzene	<0.001	mg/l	<0.001	mg/l
1,3-Dichlorobenzene	0.016	mg/l	<0.001	mg/l
1,4-Dichlorobenzene	<0.001	mg/l	<0.001	mg/l
Dichlorodifluoromethane	<0.001	mg/l	<0.001	mg/l
1,1-Dichloroethane	<0.001	mg/l	<0.001	mg/l
1,2-Dichloroethane	<0.001	mg/l	<0.001	mg/l
1,1-Dichloroethene	<0.001	mg/l	<0.001	mg/l
trans-1,2-Dichloroethene	<0.001	mg/l	<0.001	mg/l
1,2-Dichloropropane	<0.001	mg/l	<0.001	mg/l
cis-1,3-Dichloropropene	<0.001	mg/l	<0.001	mg/l
trans-1,3-Dichloropropene	<0.001	mg/l	<0.001	mg/l
Methylene chloride	<0.001	mg/l	<0.001	mg/l
1,1,2,2-Tetrachloroethane	<0.001	mg/l	<0.001	mg/l
Tetrachloroethene	<0.001	mg/l	<0.001	mg/l
1,1,1-Trichloroethane	<0.001	mg/l	<0.001	mg/l
1,1,2-Trichloroethane	<0.001	mg/l	<0.001	mg/l
Trichloroethene	<0.001	mg/l	<0.001	mg/l
Trichlorofluoromethane	<0.001	mg/l	<0.001	mg/l
Vinyl chloride	<0.001	mg/l	<0.001	mg/l

Allied Data File

SEG LABORATORIES, INC.

August 25, 1988

City of Kalamazoo
1415 N. Harrison
Kalamazoo, Michigan 49007

Attn: Dr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on July 20, 1988.

PO#: 43111

SEG Number:	77253	77254	77255	77256
Tag:	James River #JRC 20088 8:10 A.M. 7/18/88	Inmont #INM 20088 8:35 A.M. 7/18/88	Allied ✓ Paper #APC 20088 9:15 A.M. 7/18/88	Upjohn-Bishop #UJB 20088 10:10 A.M. 7/18/88
PCB - 1016, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1221, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1232, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1242, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1248, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1254, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1260, ug/L	<0.1	<0.1	<0.1	<0.1

1120 May Street, Lansing, Michigan 48906 • (517) 374-6800 • CABLE "SNELL" • FAX (517) 374-7390
A Snell Environmental Group Company

ALLIED PAPER, 08/01/88 - 08/05/88

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	15.600		mg/l	08/01/88	COMP	09:00 AM
	2.390		mg/l	08/02/88	COMP	09:00 AM
	1.480		mg/l	08/03/88	COMP	09:00 AM
	2.540		mg/l	08/04/88	COMP	09:00 AM
Mean	5.502					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	335.000		mg/l	08/01/88	COMP	09:00 AM
	310.000		mg/l	08/02/88	COMP	09:00 AM
	382.000		mg/l	08/03/88	COMP	09:00 AM
	420.000		mg/l	08/04/88	COMP	09:00 AM
Mean	361.750					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	406.000		mg/l	08/01/88	COMP	09:00 AM
	413.000		mg/l	08/02/88	COMP	09:00 AM
	490.000		mg/l	08/03/88	COMP	09:00 AM
	621.000		mg/l	08/04/88	COMP	09:00 AM
Mean	482.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	0.000	*	ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	28.000		mg/l	08/01/88	COMP	09:00 AM
	44.000		mg/l	08/02/88	COMP	09:00 AM
	194.000		mg/l	08/03/88	COMP	09:00 AM
	276.000		mg/l	08/04/88	COMP	09:00 AM

* indicates test results below detection limits

ALLIED PAPER, 08/01/88 - 08/05/88

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
Mean	135.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	10.000		mg/l	08/01/88	COMP	09:00 AM
	38.000		mg/l	08/02/88	COMP	09:00 AM
	58.000		mg/l	08/03/88	COMP	09:00 AM
	76.000		mg/l	08/04/88	COMP	09:00 AM
Mean	45.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	16.000		ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
Mean	4.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
pH	6.500		S.U.	08/02/88	GRAB	09:00 AM
	11.100		S.U.	08/03/88	GRAB	09:00 AM
	12.200		S.U.	08/04/88	GRAB	09:00 AM
	10.600		S.U.	08/05/88	GRAB	08:45 AM
Mean	10.100					

* indicates test results below detection limits

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3165

SAMPLERS: (Signature) Donald S. Hale, Robert Moreck

PURPOSE OF ANALYSIS: Daily Quarterly Sampling - Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 21488	2-1L	8/2/88	9:00 AM	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / conv. metals
DSH								

GENERAL/CONVENTIONAL		RESULT COMP	RESULT GRAB	RESULT
X	pH	6.7	6.5	DSH
X	BOD	~~310~~	355	
	CBOD			
X	COD	406		
X	TSS	~~144~~ KL	~~44~~	28
X	VSS		~~38~~	10
X	NH_3-N	15.6		
X	TOTAL P	NR.		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT ug/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	16
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 8/2/88 11:40 AM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 8/2/88 11:40 AM	DATE/TIME
1 RELINQUISHED BY: (Signature) D.S. Hale	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Robert Moncle

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 3172

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 21588	2-1L	8/3/88	9:00 AM	24		METER. / CLOUDY, NORMAL / CONV. STA. / SOLIDS / metals

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.1	11.1	DEH
X	BOD	310		
	CBOD			
X	COD	413		
X	TSS	44		
X	VSS	38		
X	NH_3-N	2.39		
X	TOTAL P	NR		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	8/3/88 11:35 AM	DATE/TIME	
RECEIVED BY: (Signature)	M. Kurz	RECEIVED BY: (Signature)	
DATE/TIME	8/3/88 11:35 AM	DATE/TIME	
1 RELINQUISHED BY: (Signature)	D. S. Hale	2 RELINQUISHED BY: (Signature)	

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3180

SAMPLERS: (Signature) Donald S. Hale, Robert Monck

PURPOSE OF ANALYSIS: Daily Quarterly Sampling Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 21688	2-1L	8/4/88	9:00 A/M	24 H		METER STA. / / conv. metals

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.6	12.2	DSH
X	BOD	382		
	CBOD			
X	COD	490		
X	TSS	194		
X	VSS	58		
X	NH_3-N	1.48		
X	TOTAL P	NR		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 8/4/88 1:45 A/M	DATE/TIME	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME	DATE/TIME	DATE/TIME
RECEIVED BY: (Signature) Robert McCall	DATE/TIME 8/4/88 1:45 A/M	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
3 RELINQUISHED BY: (Signature)	DATE/TIME 8/4/88 1:45 A/M	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3188

SAMPLERS: (Signature) Donald S. Hale, Robert Monck

PURPOSE OF ANALYSIS: Daily Quarterly Sampling Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 21788	2-1L	8/5/88	8:45 AM	24 A		METER. / CLOUDY, NORMAL / CONV metals STA. / SOLIDS

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	9.7	10.6	DEA
X	BOD	420		
	CBOD			
X	COD	621		
X	TSS	276		
X	VSS	76		
X	NH_3-N	2.54		
X	TOTAL P	NR		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 8/5/88 11:30 AM
2 RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 8/5/88 11:30 AM
4 RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

KAR Laboratories, Inc.

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 8- 9-88
Date Received : 8- 2-88
P.O. Number : 41926
Laboratory Code: 881363-3

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied APC 21588, 8/2/88, Meter Sta.

SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	<10
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	<1
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~10:1~~ ~~5~~ 1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.485	.463	.345	.339	.454				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	24.7	.472	17.6	17.3	23.2				

K = 1.02

TEST DATE 8-3-88 SAMPLE DATE 8-2-88 ANALYZED BY PJG

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date 8-1-88)				
# Mls. USED	40	2:1 2	40	40	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	1.25	1.25	1.25				
ABSORBANCE	.018	.362	.642	.526	.543				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.023	18.4	.796	.648	69.2				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	214 APC	215 WAT	215 ACU						
# Mls. USED	2:1 2	2:1 20	2:1 20						
(D.F.) DILUTION FACTOR	50	5.0	5.0						
ABSORBANCE	.306	.360	.358						
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.	15.6	1.81	1.80						

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
# Mls. USED	~~1~~ 51	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.414	.452	.291	.285	.397				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	21.1	.461	14.8	14.5	20.3				

K = 1.02

TEST DATE 8-4-88 SAMPLE DATE 8-3-88 ANALYZED BY NN

SAMPLE	Blank	P.I.	S.E.	T.E. (Grab)	UPJ (Sample Date 8-2-88)				
# Mls. USED	40	2:1 2	2.5	2.5	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	2.0	2.0	1.25				
ABSORBANCE	.020	.263	.250	.206	.296				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.026	13.4	.484	.394	37.7				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	216 ACU	216 WAT	216 BOW	216 BHI	216 CMC	215 APC			
# Mls. USED	2:1 10	2:1 20	2:1 20	2:1 20	2:1 2	2:1 20			
(D.F.) DILUTION FACTOR	10	5.0	5.0	5.0	50	5.0			
ABSORBANCE	.245	.400	.470	.346	.287	.474			
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.	2.47	2.01	2.37	1.74	14.6	2.39			

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	10T 1	5	1	1	1				
(D.F.) DILUTION FACTOR	100 50	1	50	50	50				
ABSORBANCE	.586	.457	.312	.320	.395				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	29.9	.466	15.9	16.3	20.2				

K = 1.02

TEST DATE 8-5-88 SAMPLE DATE 8-4-88 ANALYZED BY NN

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date 8-3-88)				
# Mls. USED	40	2:1 2	40	40	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	1.25	1.25	1.25				
ABSORBANCE	.048	.323	.316	.303	.224				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.061	16.4	.342	.325	28.5				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

	217	217	217	217	217	216			
SAMPLE	ACU	BHI	BOW	WAT	GBP	APC			
# Mls. USED	2:1 5	2:1 20	2:1 20	2:1 20	2:1 10	2:1 20			
(D.F.) DILUTION FACTOR	20	5.0	5.0	5.0	10	5.0			
ABSORBANCE	.439	.555	.367	.369	.608	.302			
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.	8.90	2.77	1.81	1.82	6.14	1.48			

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	10+ 5:1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.375		.284	.258	.356				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	19.1		14.6	13.2	18.2				

K = 1.07

TEST DATE 8-6-88 SAMPLE DATE 8-5-88 ANALYZED BY TW

SAMPLE	Blank	P.I.	S.E.	T.E. (grab)	UPJ (Sample Dup. 8-4-88)				
# Mls. USED	40	2:1 2	40	40	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	1.25	1.25	125				
ABSORBANCE	.024	.398	.369	.500	.712				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.031	20.3	0.439	0.607	90.7				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	218 BOW	218 WAT	218 BHI	218 ACM	217 APC				
# Mls. USED	2:1 10	2:1 20	2:1 20	2:1 10	2:1 10				
(D.F.) DILUTION FACTOR	10	5	5	10	10				
ABSORBANCE	.215	.373	.639	.800	.252				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.	2.16	1.87	3.23	8.13	254				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale
Teresa L. Hamilton

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 2234

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 33487	2-1L	12/1/87	9:50 A/M	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / conv metals

GENERAL/CONVENTIONAL		RESULT
X	pH	6.9 DSA
X	BOD	
	CBOD	
X	COD 517ppm	
X	TSS	
X	VSS	
X	NH_3-N 2.55	
X	TOTAL P .29	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT ug/l
X	CADMIUM	0.34
	TOTAL CHROMIUM	
	HEX. CHROME	
	COPPER	
	LEAD	
	NICKEL	
X	ZINC	55
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 12/1/87 11:55 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Robert R. McCully	DATE/TIME 12/1/87 11:55 A/M
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N Harrison
Kalamazoo Michigan 49007
616 385 8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

No 3164

SAMPLERS (Signature) Donald S. Hale, Robert Monck

PURPOSE OF ANALYSIS compliance monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	UPJOHN	UJB 21488	2-40ml	8/1/88	10:00 A/M		H	BISHOP RD. METER. STA. / /VOC'S
2	UPJOHN	UJB 21588	2-40ml	8/2/88	10:00 A/M		H	" / /VOC'S
3	ALLIED	APC 21588	2-40ml	8/2/88	9:00 A/M		H	CLARIFIER AT PLANT / /VOC'S

GENERAL/CONVENTIONAL	RESULT	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
	pH		CADMIUM		EPA METHOD 601
	BOD		TOTAL CHROMIUM		
	CBOD		HEX CHROME		
	COD		COPPER		
	TSS		LEAD		
	VSS		NICKEL		
	NH_3 N		ZINC		EPA METHOD 602
	TOTAL P		SILVER		
	ORTHO P		MERCURY		
	GREASE/OIL		BERYLLIUM		
	CHLORIDE		BARIUM		
	CN TOTAL				
	CN AMENABLE			X	OTHER DNR SCAN 1 & 2

REMARKS

DATE/TIME	DATE/TIME
RECEIVED BY (Signature)	RECEIVED BY (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY (Signature)	4 RELINQUISHED BY (Signature)
DATE/TIME 8/2 10:15 A/M	DATE/TIME
RECEIVED BY (Signature)	RECEIVED BY (Signature)
DATE/TIME 8/2 10:15 A/M	DATE/TIME
1 RELINQUISHED BY (Signature) D. S. Hale	2 RELINQUISHED BY (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 3052

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Surcharge Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED - DOWN STREAM	APC-2 18788	1-1L	7/5/88	2:00 P/M		X	SOUTHWEST INTERCEPTOR DOWNSTREAM FROM CLARIFIER / CLOUDY, GRAY, SOLIDS / P/M
2	ALLIED - UP STREAM	APC-1 18788	1-1L	7/5/88	2:15 P/M		X	SOUTHWEST INTERCEPTOR UPSTREAM FROM CLARIFIER / CLOUDY, TAN, SOLIDS / P/M

GENERAL/CONVENTIONAL		(2) DOWNSTREAM	(1) UPSTREAM
X	pH	~~7.4~~ 7.3	7.5
X	BOD	256	240
	CBOD		
	COD		
X	TSS	~~275~~ 1965	~~1965~~ 275
X	VSS	~~253~~ 615	~~615~~ 253
	NH_3-N		
	TOTAL P		
	ORTHO P		
	GREASE/OIL		
	CHLORIDE		
	CN - TOTAL		
	CN - AMENABLE		

TRACE METALS	RESULT
CADMIUM	
TOTAL CHROMIUM	
HEX. CHROME	
COPPER	
LEAD	
NICKEL	
ZINC	
SILVER	
MERCURY	
BERYLLIUM	
BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:
* SAMPLES COLLECTED WHILE ALLIED CLARIFIER SHUT DOWN.

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 7/5/88 3:05 P/M	RECEIVED BY: (Signature)	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

D O & B.O.D.

DATE TEST DUE _____ DATE OF ANALYSIS _____

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLE-TION	TEST	AVE. MG./L.	DAYS	FACTOR	REMARKS
7/6	BLANK (Seeded)	0	22	8.6/7.4	1.2			5	1.000	
	APC-118788	3	23	8.6/8.0	0.6		240		7-11-88	DUE DATE
	20:1	10	41	8.6/7.9	0.7				7-5-88	SAMPLE DATE
		30	601	8.5/7.3	1.2				7-6-88	TEST DATE
		75	179	8.2/5.2	3.0	240				QSN/QSN

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLE-TION	TEST	AVE. MG./L.	DAYS	FACTOR	REMARKS
7/6	BLANK (Seeded)	0	22	8.6/7.4	1.2			5	1.000	
	APC-2 18788	3	126	8.6/8.0	0.6		256		7-11-88	DUE DATE
	20:1	10	20	8.7/7.7	1.0				7-5-88	SAMPLE DATE
		30	70	8.5/7.2	1.3				7-6-88	TEST DATE
		75	47	8.2/5.0	3.2	256				QSN/QSN

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLE-TION	TEST	AVE. MG./L.	DAYS	FACTOR	REMARKS
	BLANK (Seeded)	0						5	1.000	
										DUE DATE
										SAMPLE DATE
										TEST DATE

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLE-TION	TEST	AVE. MG./L.	DAYS	FACTOR	REMARKS
	BLANK (Seeded)	0						5	1.000	
										DUE DATE
										SAMPLE DATE
										TEST DATE

APC-2

SUSPENDED SOLIDS ANALYSIS - INDUSTRIALS

187

SAMPLE SOURCE				
Dish No./D.F.	Gd x 10	rajo x 10	x	x
Wt. Dish & Solids	254387	252385		
Wt. Dish	254204	252175		
MG./L. Solids	1830 183	2100 210	1965	
Wt. Dish & Solids	254387	252385		
Wt. Dish & Ash	254335	252314		
MG./L. Vol. Solids	520 52	710 71	615	

Analyst TW

Date Ran 7-6-88

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

APC -1

SUSPENDED SOLIDS ANALYSIS - INDUSTRIALS

187

SAMPLE SOURCE				
Dish No./D.F.	D06 x 5	9 x 5	x	x
Wt. Dish & Solids	260642	242388		
Wt. Dish	260591	242329	TW	
MG./L. Solids	255 51	295 59	275	
Wt. Dish & Solids	260642	242388		
Wt. Dish & Ash	260596	242333		
MG./L. Vol. Solids	230 46	275 55	253	

Analyst TW

Date Ran 7-6-88

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

SAMPLE SOURCE				
Dish No./D.F.	x	x	x	x
Wt. Dish & Solids				
Wt. Dish				
MG./L. Solids				
Wt. Dish & Solids				
Wt. Dish & Ash				
MG./L. Vol. Solids				

Analyst _____

Date Ran _____

ALLIED PA ? COMPANY - QUARTERLY

Composite Sampling Results

DATE OFF:	6/1/88	6/2/88	6/3/88		
TIME OFF:	9:00 AM	8:45 AM	8:45 AM		
ALIQUOTS (#)					AVERAGE
BOD mg/l	235	310	192		240
COD mg/l	199	267	377		281
TSS mg/l	28	42	38		36
NH3-N mg/l	1.23	1.14	1.39		1.25
Cu ug/l	63	32	21		39
Zn ug/l	35	20	123		60
Ag ug/l	<0.50	<0.50	<0.50		<0.50

Grab Sampling Results

D A T E :	6/1/88	6/2/88	6/3/88		
T I M E :	9:00 AM	8:45 AM	8:45 AM		
pH	7.6	6.9	6.4		
G & O mg/l					

* See attached DNR Scans 1 and 2 results from KAR Labs

KAR Laboratories, Inc.

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 6-23-88
Date Received : 6- 3-88
P.O. Number : 41926
Laboratory Code: 880976

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 15488, 6-2-88

SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	3.6	Methylene Chloride	<10
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	2.7
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 2919

SAMPLERS: (Signature) Donald S. Hale
Robert E Monck

PURPOSE OF ANALYSIS: compliance monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 15488	2-40ml	6/2/88	8:45 A/M		H	METER. STA. / VOC's

GENERAL/CONVENTIONAL	RESULT	TRACE METALS	RESULT	ORGANIC COMPOUNDS	RESULT
	pH		CADMIUM		EPA METHOD 601
	BOD		TOTAL CHROMIUM		
	CBOD		HEX. CHROME		
	COD		COPPER		
	TSS		LEAD		
	VSS		NICKEL		
	NH_3-N		ZINC		EPA METHOD 602
	TOTAL P		SILVER		
	ORTHO P		MERCURY		
	GREASE/OIL		BERYLLIUM		
	CHLORIDE		BARIUM		
	CN - TOTAL				
	CN - AMENABLE			X	OTHER DNR SCAN 1 & 2

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 6/2 9:15 A/M	DATE/TIME
RECEIVED BY: (Signature) [illegible]	RECEIVED BY: (Signature)
DATE/TIME 6/2 9:15 A/M	DATE/TIME
1 RELINQUISHED BY: (Signature) [illegible]	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 2909

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Daily Route - Quarterly

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 15288	2-1L	6/1/88	9:00 AM	24 A		METER. / CLOUDY, LT. GRAY / CONV. STD. / NORMAL SOLIDS / metals

	GENERAL/CONVENTIONAL	RESULT (COMP. / GRAB)		TRACE METALS	RESULT ug/l		ORGANIC COMPOUNDS	RESULT
X	pH	7.5 / 7.6 DSH		CADMIUM			EPA METHOD 601	
X	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	199 ppm	X	COPPER	63			
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	1.23	X	ZINC	35		EPA METHOD 602	
	TOTAL P		X	SILVER	<0.50			
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	2 RELINQUISHED BY: (Signature)	DATE/TIME	3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
D.S. Hale	6/1/88 11:55 AM	[illegible]							

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 2918

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Daily Route - Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 15388	2-1L	6/2/88	8:45 A/M	24 A		METER. STA. / CLOUDY, NORMAL GRAY, SOLIDS / conv metals

GENERAL/CONVENTIONAL		COMP	GRAB	RESULT
X	pH	7.4	6.9	DSH
X	BOD			
	CBOD			
X	COD	267ppm		
X	TSS			
X	VSS			
X	NH_3-N	1.14		
	TOTAL P			
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT ug/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	32
	LEAD	
	NICKEL	
X	ZINC	20
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 6/2/88 11:00 A/M	RECEIVED BY: (Signature) Jim Hyde
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	DATE/TIME	DATE/TIME
	DATE/TIME	DATE/TIME

Form 1015

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
# Mls. USED	10 ~~5~~ 1	5	1	1	1				
(D.F.) DILUTION FACTOR	100 50	1	50	50	50				
ABSORBANCE	.683	.471	.637	.634	.787				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	34.8	.480	32.5	32.3	40.1				

K = 1.0173 = 1.02

TEST DATE 6-2-88 SAMPLE DATE 6-1-88 ANALYZED BY [illegible]

SAMPLE	Blank	P.I.	S.E.	T.E grab	Sample Date 5/31/88 UPJ				
# Mls. USED	40	2:1 2	40	40	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	1.25	1.25	12.5				
ABSORBANCE	.076	.482	.689	.624	.782				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.097	24.5	.781	.699	99.6				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

	ACI	PCP	LAK	WMP	HAW	APC ✓	BLS		
SAMPLE	153	153	153	153	153	152	153		
# Mls. USED	2:1	2:1 ~~20~~ ST 40	2:1 ~~5~~ ST 40	2:1 5	2:1 25	2:1 40	2:1 10 ST		
(D.F.) DILUTION FACTOR	50	5	2.5	20	4	2.5	10		
ABSORBANCE		.451	.110	.306	.516	.522	.334		
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.		2.20	.184	6.15	2.01	1.23	3.31		

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 2927

SAMPLERS: (Signature) Donald S. Hale, Robert E Morack

PURPOSE OF ANALYSIS: Daily Route - Quarterly Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 15488	2-1L	6/3/88	8:45 AM	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / CONV. / metals

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS	RESULT
		CDHP / GLAB					
X	pH	6.5 / 6.4 DSH		CADMIUM		EPA METHOD 601	
X	BOD			TOTAL CHROMIUM			
	CBOD			HEX. CHROME			
X	COD	377 ppm	X	COPPER	21		
X	TSS			LEAD			
X	VSS			NICKEL			
X	NH_3-N	1.39	X	ZINC	123	EPA METHOD 602	
DSH	TOTAL P		X	SILVER	<0.50		
	ORTHO P			MERCURY			
	GREASE/OIL			BERYLLIUM			
	CHLORIDE			BARIUM			
	CN - TOTAL						
	CN - AMENABLE					OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	6/13/88 11:35 AM	DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME	6/13/88 11:35 AM	DATE/TIME	
1 RELINQUISHED BY: (Signature)	D.S. Hale	2 RELINQUISHED BY: (Signature)	

Form 1015

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
# Mls. USED	10 ~~5~~ 1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.736 ~~.680~~	.468	.440	.442	.680				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F	375	.477	224	225	347				

K= 1.0173 - 102

TEST DATE 6-3-88 SAMPLE DATE 6-2-88 ANALYZED BY ST

Sample Date 6-1-88

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ				
# Mls USED	40	21 2	40	40	51 2				
(D.F.) DILUTION FACTOR	1.25	50	1.25	1.25	1.25				
ABSORBANCE	.025	.730	~~.841~~ .240	.523	.635				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.) x D.F.	.032	372	~~.90~~ .911	.635	80.9				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	WMP 154	APC 154	LAK 154	PCB 154					
# Mls. USED	21 5	21 40	21 40	21 5					
(D.F.) DILUTION FACTOR	20	2.5	25	20					
ABSORBANCE	.513	.460	.195	.670					
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.) x D.F.	10.4	1.14	.465	13.6					

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST									
SAMPLE	Rec	Std	PE	PE	SI				
#Mls. USED	~~10~~ 5	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.783		.499	.503	.493				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	39.9		25.5	25.7	25.1				

K= 101.13 = 102

TEST DATE 6-4-88 SAMPLE DATE 6-3-88 ANALYZED BY NN

SAMPLE	Blank	P.I.	S.E.	Grab TE	UPJ (Sample Date 6-2-88)				
# Mls USED	40	2:1 2	20	25	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50	2.5	20	125				
ABSORBANCE	.032	.585	.673	.519	.601				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.041	29.8	168	102	76.6				

No PCP 155 or HAV 155 today

TEST DATE ____ SAMPLE DATE ____ ANALYZED BY ____

SAMPLE	APC154	LAK155	WMP 155	KC155					
# Mls. USED	2:1 40	2:1 40	2:1 1	2:1 25					
(D.F.) DILUTION FACTOR	2.50	2.50	100	4.0					
ABSORBANCE	.561	.149	291	.519					
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.	139	.339	29.6	2.08					

TEST DATE ____ SAMPLE DATE ____ ANALYZED BY ____

COMMENTS:

KAR Laboratories, Inc.

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 2-24-88
Date Received : 2-10-88
P.O. Number :
Laboratory Code: 880234-1

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 04088, 2-9-88

SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	1.8	Methylene Chloride	<1
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	1.7	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	48
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	<1	m-and/or p-Xylene	2.0
Ethylbenzene	<1	o-Xylene	3.2
Toluene	<1		

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

KAR Laboratories, Inc.
4425 Manchester Road
Kalamazoo, MI 49002

(616) 381-9666

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007

Date: February 24, 1988

Laboratory Code: 880234

Attn: Mr. Bruce Merchant

Re: DNR Scan 1 & 2 analysis of two wastewater samples submitted February 10, 1988.

	Sample I.D.	DNR Scan 1 & 2
1)	Allied Paper, APC 04088 2-9-88	*
2)	Allied Paper, APC 04188 2-10-88	*

*Refer to the results attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma

William H. Bouma, Ph.D.
Director

WHB/mcr

KAR Laboratories, Inc

ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

Report Date : 2-24-88
Date Received : 2-10-88
P.O. Number :
Laboratory Code: 880234-2

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample I.D. : Allied Paper, APC 04188, 2-10-88

SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	<1
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	<1	1,1,1-Trichloroethane	37
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	<1
cis-1,2-Dichloroethene	<1	Trichloroethene	<1

SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	<1	m-and/or p-Xylene	<1
Ethylbenzene	<1	o-Xylene	<1
Toluene	<1		

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

Composite Sampling Results

DATE OFF:	2/9/88	2/10/88	2/11/88	2/12/88	
TIME OFF:	9:45 AM	9:35 AM	9:25 AM	9:30 AM	
ALIQUOTS (#)					AVERAGE
BOD mg/l	288	325	338	275	306
COD mg/l	340	483	182	306	320
TSS mg/l	24	112	36	32	51
NH3-N mg/l	3.10	3.66	3.08	2.25	3.02
Total P mg/l	<.10	0.30	<.10	0.28	0.14
Cu ug/l	47	44	36	32	40.
Zn ug/l	52	48	52	45	49
Ag ug/l	<0.25	<0.25	<0.25	<0.25	<0.25

Grab Sampling Results

D A T E :	2/9/88	2/10/88	2/11/88	2/12/88	
T I M E :	9:45 AM	9:35 AM	9:25 AM	9:30 AM	
pH	6.9	6.6	6.6	6.7	
G & O mg/l					

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly - Daily Route

№ 2486

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 03988	2-1L	2/9/88	DSH 9:45 A/M	24 A		METER. / CLOUDY, NORMAL / CONV STA. / SOLIDS metals

GENERAL/CONVENTIONAL		RESULT COMP. GRAB	TRACE METALS		RESULT ug/l	ORGANIC COMPOUNDS	RESULT
X	pH	6.5 / 6.9 DSH		CADMIUM			EPA METHOD 601
X	BOD			TOTAL CHROMIUM			
	CBOD			HEX. CHROME			
X	COD	340ppm	X	COPPER	47		
X	TSS			LEAD			
X	VSS			NICKEL			
X	NH_3-N	3.10	X	ZINC	52		EPA METHOD 602
X	TOTAL P	≤.10	X	SILVER	<0.25		
	ORTHO P			MERCURY			
	GREASE/OIL			BERYLLIUM			
	CHLORIDE			BARIUM			
	CN - TOTAL						
	CN - AMENABLE						OTHER

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 2/9/88 11:15 A/M	RECEIVED BY: (Signature) [signature]	DATE/TIME 2/9/88 11:15 A/M
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly - Daily Route

N: 2491

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 04088	2-1L	2/10/88	9:35 am	24 A		SAMPLER IN METER. STA. / cloudy normal solids / CONV metals

GENERAL/CONVENTIONAL		COMP.	GRAB	RESULT
X	pH	6.7	6.6	DSH
X	BOD			
	CBOD			
X	COD	483 ppm		
X	TSS			
X	VSS			
X	NH_3-N	3.66		
X	TOTAL P	.30		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	44
	LEAD	
	NICKEL	
X	ZINC	40
X	SILVER	<0.25
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
EPA METHOD 601	
EPA METHOD 602	
OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 2/10/88 11:40 A/M	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 2/10/88 11:40 A/M	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly - Daily Route

№ 2496

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 041188	2-1L	2/11/88	9:25 AM	24 H		SAMPLER IN METER. STA. / CLOUDY, NORM. SOLIDS / COND metals

GENERAL/CONVENTIONAL		COMP.	GRAB	RESULT
X	pH	6.7	6.6	
X	BOD			
	CBOD			
X	COD	182 ppm		
X	TSS			
X	VSS			
X	NH_3-N	3.08		
X	TOTAL P	≤.10		
	ORTHO P			
	GREASE/OIL			
	CHLORIDE			
	CN - TOTAL			
	CN - AMENABLE			

TRACE METALS		RESULT µg/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	36
	LEAD	
	NICKEL	
X	ZINC	52
X	SILVER	<0.25
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601
	EPA METHOD 602
	OTHER

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 2/11/88 1:11 PM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 2/11/88 1:11 PM	DATE/TIME
1 RELINQUISHED BY: (Signature) D.S. Hale	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 2502

SAMPLERS: (Signature) Timothy J. Meulenberg, Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly - Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 042288	2-1L	2/12/88	9:30 am	24 A		SAMPLER IN METER STA. / CLOUDY NORMAL SOLIDS / CONV metals

	GENERAL/CONVENTIONAL	RESULT COMP.	RESULT GRAB.
X	pH	6.7	6.7 DSH
X	BOD		
	CBOD		
X	COD	~~28~~ 306	
X	TSS		
X	VSS		
X	NH_3-N	2.25	
X	TOTAL P	.28	
	ORTHO P		
	GREASE/OIL		
	CHLORIDE		
	CN - TOTAL		
	CN - AMENABLE		

	TRACE METALS	RESULT ug/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	32
	LEAD	
	NICKEL	
X	ZINC	45
X	SILVER	<0.25
	MERCURY	
	BERYLLIUM	
	BARIUM	

	ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	2/12/88 11:30 AM	DATE/TIME	
RECEIVED BY: (Signature)	Chris Hyde	RECEIVED BY: (Signature)	
DATE/TIME	2/12/88 11:30 AM	DATE/TIME	
1 RELINQUISHED BY: (Signature)	D.S. Hale	2 RELINQUISHED BY: (Signature)	

Form 1015

ALLIEL /APER - QUARTERLY

Composite Sampling Results

DATE OFF:	12/1/87	12/2/87	12/3/87	12/4/87	
TIME OFF:	9:50 AM	9:20 AM	9:15 AM	9:15 AM	
ALIQUOTS (#)					AVERAGE
BOD mg/l	420	333	353	218	330
COD mg/l	517	668	476	464	531
TSS mg/l	76	46	48	24	48
NH3-N mg/l	2.55	2.01	3.24	2.14	2.48
Total P mg/l	0.29	0.68	0.36	0.37	0.42
Cd ug/l	0.34	0.20	0.53	<0.20	0.27
Zn ug/l	55	43	33	30.	40.
Ag ug/l	<0.50	<0.50	<0.50	<0.50	<0.50

Grab Sampling Results

D A T E :					
T I M E :					
pH					
G & O mg/l					

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~10.1~~ ~~.52~~	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 25	1	50	50	50				
ABSORBANCE	.638	.457	.357	.404	.609				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	15.8	0.454	17.7	20.1	30.2				

K = .993

TEST DATE 2-11-88 SAMPLE DATE 2-10-88 ANALYZED BY NN

SAMPLE	Blank	P.I.	S.E.	T.E. (Grab)	UPJ (Sample Date 2-9-88)	Allied (040924 ~~041~~)	BLS (041)	GBP (041)	
# Mls. USED	40	2:1 2	~~10~~ 5 ND	10	5:1 2	2:1 10	2:1 10	2:1 10	
(D.F.) DILUTION FACTOR	1.25	50	~~5~~ 10	5	125	10	10	10	
ABSORBANCE	.020	.563	.405	.662	.224	.371	.287	.351	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	0025	27.9	4.00	3.26	27.8	3.66	2.82	3.46	

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~5~~ 10 1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.389	.465	.394	.396	.679				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	19.3	0.462	19.6	19.7	33.7				

K= .993

TEST DATE 2-12-88 SAMPLE DATE 2-11-88 ANALYZED BY NN

SAMPLE	Blank	P.I.	S.E.	T.E. Grab	UPJ (Sample Date. 2-10-88)	APC (04/25/88) ~~042~~	BLS 042	GBP 042	
# Mls. USED	40	2.1 2	5	5	5:1 2	2:1 10	2:1 10	2:1 5	
(D.F.) DILUTION FACTOR	1.25	50	10	10	125	10	10	20	
ABSORBANCE	.019	.465	.448	.432	.470	.313	.562	.596	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	0.024	23.1	4.42	4.27	58.3	3.08	5.56	11.8	

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~10.1~~ ~~5~~ 1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.514		.398	.362	.660				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	25.5		19.8	18.0	32.8				

K= .993

TEST DATE 2-13-88 SAMPLE DATE 2-12-88 ANALYZED BY TW

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date 2-11-88)	Allied 042	BLS 043	GBP 043	
# Mls. USED	40	2:1 2	5	5	5:1 TW ~~2~~ 5	2:1 10	2:1 10	2:1 5	
(D.F.) DILUTION FACTOR	1.25	50	10	10	50 TW ~~125~~	10	10	20	
ABSORBANCE	.002 verified TW	.554	.636	.505	.766	.227	.843	.368	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.002	27.5	6.31	5.01	38.0	2.25	8.37	7.31	

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~10.1~~ 5	5	1	1	1				
(D.F.) DILUTION FACTOR	~~100~~ 50	1	50	50	50				
ABSORBANCE	.370	.466	.458	.442	.739				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	18.4	0.463	22.7	21.9	36.7				

K= .993

TEST DATE 2-10-88 SAMPLE DATE 2-9-88 ANALYZED BY NW

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ	Allied	BLS	DPU	GBF
					Sample Date. 2-8-88	~~040~~ 039	040	040	040
# Mls. USED	40	2:1 2	10	10	5:1 2	2:1 10	2:1 10	5:1 2	2:1 5
(D.F.) DILUTION FACTOR	1.25	50	5	5	125	10	10	125	20
ABSORBANCE	.033	.397	.650	NS	.503	.316	.381	.303	.239
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	0.041	19.7	3.19	N.S	62.4	3.10	3.74	37.6	4.71

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Leisa P Hamilton
Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 2241

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 33587	2-1L	12/2/87	9:20 AM	24 A		Metering Station / Cloudy, normal Solids / CONV Metals

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS	RESULT
X	pH	7.3 ASH	X	CADMIUM	<0.20 ~~0.34~~ 49/l		EPA METHOD 601
X	BOD			TOTAL CHROMIUM			
	CBOD			HEX. CHROME			
X	COD 668ppm			COPPER			
X	TSS			LEAD			
X	VSS			NICKEL			
X	NH_3-N 2.01		X	ZINC	43		EPA METHOD 602
X	TOTAL P .68		X	SILVER	<0.50		
	ORTHO P			MERCURY			
	GREASE/OIL			BERYLLIUM			
	CHLORIDE			BARIUM			
	CN - TOTAL						
	CN - AMENABLE						OTHER

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 12/6/87 11:45 AM	RECEIVED BY: (Signature) Leisa S. Hale	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Teresa Hamilton, Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 2247

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 33687	2-1L	12/3/87	9:15 AM	24 A		Refering Station / CLOUDY, NORMAL SOLIDS / CONV, Metals

GENERAL/CONVENTIONAL		RESULT
X	pH	6.9
X	BOD	
	CBOD	
X	COD	476 ppm
X	TSS	
X	VSS	
X	NH_3-N	3.24
X	TOTAL P	.36
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT ug/l
X	CADMIUM	0.53
	TOTAL CHROMIUM	
	HEX. CHROME	
	COPPER	
	LEAD	
	NICKEL	
X	ZINC	33
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 12/3/87 1:30pm	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 12/3/87 1:30pm	DATE/TIME
1 RELINQUISHED BY: (Signature)	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling - Daily Route

№ 2252

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 33787	2-1L	12/4/87	9:15 AM	24 A		Metering Station / CLOUDY, NORMAL SOLIDS / conv Metals

GENERAL/CONVENTIONAL		RESULT
X	pH	7.0 SU
X	BOD	
	CBOD	
X	COD 464 ppm	
X	TSS	
X	VSS	
X	NH_3-N 2.14	
X	TOTAL P .37	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT ug/l
X	CADMIUM	<0.20
	TOTAL CHROMIUM	
	HEX. CHROME	
	COPPER	
	LEAD	
	NICKEL	
X	ZINC	30
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601
	EPA METHOD 602
	OTHER

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 12/4/87 11:25 AM	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Jim Hale	DATE/TIME 12/4/87 11:25 AM	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	S.I.				
#Mls. USED	10:1 5	5	1	1	1				
(D.F.) DILUTION FACTOR	100	1	50	50	50				
ABSORBANCE	.343	.491	.484	.482	.528				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	34.1	.488	24.0	23.9	26.2				

K= .993

TEST DATE 12-2-87 SAMPLE DATE 12-1-87 ANALYZED BY RT

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date: 11-30-87)	APC 334	BPY 335	LSF 335	UJA 335
# Mls. USED	40	2:1 2	10	10	5:1 2	2:1 10	2:1 2	2:1 2	2:1 ~~5~~ 10
(D.F.) DILUTION FACTOR	1.25	50	5	5	125	10	50	50	10
ABSORBANCE	.024	.491	.377	.328	.666	.260	.346	.159	.236
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.030	24.3	1.84	1.60	82.6	2.55	3.41	7.86	2.31

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	S.I.				
#Mls. USED	10:1 5	5	1	1	1				
(D.F.) DILUTION FACTOR	100	1	50	50	50				
ABSORBANCE	.274	.479	.409	.408	.594				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	27.2	.476	20.3	20.3	29.5				

K= .993

TEST DATE 12-3-87 SAMPLE DATE 12-2-87 ANALYZED BY RT

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ	APC	BPY	LSF	
					Sample Date.	33587	33687	53687	
# Mls. USED	40	2:1 2	10	10	5:1 2	2:1 10	2:1 2	2:1 2	
(D.F.) DILUTION FACTOR	1.25	50	5	5	125	.10	50	50	
ABSORBANCE	.089	.450	.679	.634	.488	.213	.116	.155	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	0.110	22.2	3.26	3.04	60.5	2.01	5.65	7.59	

TEST DATE_____ SAMPLE DATE_____ ANALYZED BY_____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE_____ SAMPLE DATE_____ ANALYZED BY_____

COMMENTS:

$NH_3 - N$

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	S.I.				
#Mls. USED	10:1 5	5	1	1	1				
(D.F.) DILUTION FACTOR	100	1	50	50	50				
ABSORBANCE	.262	.489	.387	.391	.523				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	26.0	.486	19.2	19.4	26.0				

K= .993

TEST DATE 12-4-87 SAMPLE DATE 12-3-87 ANALYZED BY RT

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date. 12-2-87)	APC (33687)	LSF (33787)	UCC (33787)	
# Mls. USED	40	2:1 2	10	10	5:1 2	2:1 10	2:1 5	2:1 5	
(D.F.) DILUTION FACTOR	1.25	50	5	5	125	~~10~~ RT 10	20 ~~.153~~ RT	20	
ABSORBANCE	.042	.370	.434	.491	.348	.332	.153	.390	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.052	18.3	2.10	2.39	43.1	3.24	2.99	7.69	

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS:

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.	SI				
#Mls. USED	~~10x~~ ~~5~~ 1	5	1	1	1				
(D.F.) DILUTION FACTOR	~~10~~ 050	1	50	50	50				
ABSORBANCE	.692		.486	.479	.639				
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	34.4		24.1	23.8	31.7				

K= .993

TEST DATE 12-5-87 SAMPLE DATE 12-4-87 ANALYZED BY TW

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ	Allied	Landscape	BPY	
					Sample Date. 12-3-87	33787	33887	33887	
# Mls. USED	40	2:1 2	10	10	5:1 2	2:1 10	2:1 2	2:1 2	
(D.F.) DILUTION FACTOR	1.25	50	5	5	125	10	50	50	
ABSORBANCE	.029	.433	.337	.398	.221	.219	.143	.123	
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.036	21.5	1.64	1.94	27.4	2.14	7.06	6.07	

TEST DATE_____ SAMPLE DATE_____ ANALYZED BY_____

SAMPLE									
# Mls. USED									
(D.F.) DILUTION FACTOR									
ABSORBANCE									
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.									

TEST DATE_____ SAMPLE DATE_____ ANALYZED BY_____

COMMENTS:

PROJECT KALAMAZOO

DATE January 8, 1988

Brighton Analytical Inc.

1576 Alloy Parkway Phone (313) 887-6364 Highland, Michigan 48031

DATA SUMMARY SHEET

PARAMETER	UNITS	Blank 33687 12/2/87	Allied Paper 12/2/87	James River 12/2/87	Georgia Pacific 12/2/87	Blank 34387 12/9/87	Inmont 12/9/87	Upjohn 12/9/87
Aroclor 1221	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1254	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1260	ug/l	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Total PCB's	ug/l	<0.05	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05

ALLIED PAPER

PARAMETER	9/1/87	9/2/87	9/3/87	9/4/87	AVG
pH	7.4	6.9	7.4	6.9	-
BOD mg/l	265	282	230	130	230
COD mg/l	203	294	314	231	261
TSS mg/l	40	48	30	24	40
VSS mg/l	24	24	6	2	10
NH3-N mg/l	1.73	≤3.29	4.29	3.70	2.43
Cu ug/l	12	<10	<10	10	<10
Zn ug/l	<10	<10	22	<10	<10
Ag ug/l	<0.50	<0.50	<0.50	<0.50	<0.50

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1882

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 24387	2-1L	9/1/87	9:35 AM	24 H		Metering Station / CLOUDY, NORMAL SOLIDS / Metals & CONV

GENERAL/CONVENTIONAL		RESULT
X	pH	7.4 DSH
X	BOD	265 ppm
	CBOD	
* X	COD	263
X	TSS	40
X	VSS	24
X	NH_3-N	1.73
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT µg/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	12
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601
	EPA METHOD 602
	OTHER

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 9/1/87 12:50 PM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 9/1/87 12:50 PM	DATE/TIME
1 RELINQUISHED BY: (Signature) D.S. Hale	2 RELINQUISHED BY: (Signature)

Form 1015

* COD < BOD

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1890

SAMPLERS: (Signature) Teresa Hamilton, Timothy Meulenberg

PURPOSE OF ANALYSIS: Quarterly Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 24487	1-1L	9/2/87	9:20 AM	24 A		Metering Station / cloudy; milky; heavier than normal solids / Conv Metals

GENERAL/CONVENTIONAL		RESULT
X	pH	6.9 (TCM)
X	BOD	282 ppm
	CBOD	
X	COD	294
X	TSS	48
X	VSS	24
X	NH_3-N	≤3.29 *
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT µg/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	<10
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS: Slightly * turbid

1 RELINQUISHED BY: (Signature) [signature]	DATE/TIME 9/2/87 10:58 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) [signature]	DATE/TIME 9/2/87 10:58 AM
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1894

SAMPLERS: (Signature) Donald S. Hale
Teresa J. Hamilton

PURPOSE OF ANALYSIS: Quarterly Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 24587	1-1L	9/3/87	9:20 AM	24 #		Metering Station / semi-cloudy, normal solids / conv Metals

GENERAL/CONVENTIONAL		RESULT
X	pH	7.4 ASA
X	BOD 230 ppm	
	CBOD	
X	COD 314	
X	TSS 30	
X	VSS 6	
X	NH_3-N 4.29	
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT µg/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	22
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 9/3/87 11:35 AM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 9/3/87 11:35 AM	DATE/TIME
1 RELINQUISHED BY: (Signature) D.S. Hale	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1899

SAMPLERS: (Signature) Donald S. Hale / Lewis J. Hamilton

PURPOSE OF ANALYSIS: Quarterly Sampling / Daily Route

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED	APC 244037	2 - 1L	9/4/87	9:15 AM	24 A		METER, / CLOUDY, NORMAL / COAV STA. / SOLIDS, PINK TINT / metals

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT µg/L	ORGANIC COMPOUNDS	RESULT
X	pH	6.9 DSH		CADMIUM		EPA METHOD 601	
X	BOD	130 ppm		TOTAL CHROMIUM			
	CBOD			HEX. CHROME			
X	COD	231	X	COPPER	10		
X	TSS	24		LEAD			
X	VSS	2		NICKEL			
X	NH_3-N	3.70	X	ZINC	<10	EPA METHOD 602	
	TOTAL P		X	SILVER	<0.50		
	ORTHO P			MERCURY			
	GREASE/OIL			BERYLLIUM			
	CHLORIDE			BARIUM			
	CN - TOTAL						
	CN - AMENABLE					OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 9/4/87 11:20 AM	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 9/4/87 11:20 AM	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

NH_3-N

SAMPLE	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.651	.534	.503	.517					
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	62.2	.510	24.0	24.7					

TEST DATE 9-2-87 Sample Date 9-1-87 ANALYZED BY RT

K = .955

SAMPLE	Blank	PI	SE	TE	TEgrab	UPJ			
Sample Date						8-31-87			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.030	.459	.208	.173		.510			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.036	21.9	.957	.790		60.8			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE	Blank	II	IE	APC	BPE	BPF			
				24387	24487	24487			
# Mls. Used	40	2:1 5	2:1 5	2:1 25	2:1 2	2:1 40			
(D.F.) Dilution Factor	1.25	20	20	4	50	2.5 HOT			
Absorbance				.462	.533	.038			
(Conc.) (mg/l) Concentration		done by titration							
(mg/l) (Conc.) x D.F.				1.73	25.4	.055			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

NH_3-N

SAMPLE	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.549	.588	.546	.573					
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	52.4	.561	26.1	27.4					

TEST DATE 9-3-87 Sample Date 9-2-87 ANALYZED BY QSH

K = .955

SAMPLE	Blank	PI	SE	TE	TEgrab	UPJ (Sample Date 9-1-87)			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.095	.591	.210	.169	—	.598			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.113	28.1	.890	.694	—	71.3			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE	Blank	II	IE	TEX (Slightly Turbid, 245)	BPF (245)	BPE (245)	APC (Slightly Turbid, 244)		
# Mls. Used	40	2:1 5	2:1 5	5:1 40	2:1 25	2:1 2	2:1 10		
(D.F.) Dilution Factor	1.25	20	20	6.25	4	50	10		
Absorbance	—	Titrate	Titrate	.784	.158	.482	.356		
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	—	—	—	4.57	.491	22.9	3.29		

TEST DATE _____ Sample Date _____ ANALYZED BY _____

$NH_3 - N$

(TEST:

SAMPLE	Rec.	Std	P.E.	P.E.					
#Mls. USED	10:1 5	5	1	1					
(D.F.) DILUTION FACTOR	100	1	50	50					
ABSORBANCE	.483	.535	.519	.522					
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	46.1	.511	24.8	24.9					

K= .955

TEST DATE 9-4-87 SAMPLE DATE 9-3-87 ANALYZED BY GSN

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date 9-2-87)	ACR 246			
# Mls. USED	40	2:1 2	20	20	5:1 2	2:1 10			
(D.F.) DILUTION FACTOR	1.25	50	2.5	2.5	125	10 ~~220~~ 954			
(SORBANCE	.047	.488	.259	.205	.445	.220			
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.056	23.2	.562	.433	53.1	2.05			

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	BPE 24687	BPF	*ACR serum	*Allied ~~24587~~	Bioassay - 9-3-87 Blank	Test.	Well	River	
# Mls. USED	2:1 2	2:1 40	2:1 ~~40~~	2:1 10	40	40	40	40	
(D.F.) DILUTION FACTOR	50	2.50	2.50	10	1.25	1.25	1.25	1.25	
ABSORBANCE	.572	.098	.999	.455	.034	.542	.129	.107	
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.	27.3	.178		4.29	.041	.606	.113	.087	

ST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

COMMENTS: * Slightly Turbid

NH_3 - N

TEST:

SAMPLE	Rec.	Std	P.E.	P.E.					
#Mls. USED	10:1 5	5	1	1					
(D.F.) DILUTION FACTOR	100	1	50	50					
ABSORBANCE	.468	.581	.457	.468					
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F	44.7	.498	21.8	22.3					

K= .955

TEST DATE 9-5-87 SAMPLE DATE 9-4-87 ANALYZED BY RT

SAMPLE	Blank	P.I.	S.E.	T.E.	UPJ (Sample Date 9-3-87)				
# Mls. USED	40	2:1 2	[illegible]	[illegible]	5:1 2				
(D.F.) DILUTION FACTOR	1.25	50			125				
ABSORBANCE	.085	.607	[illegible]	[illegible]	[illegible]				
(mg/l) (CONC.) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.101	25.2	1.28	~~.165~~ .864 RT	56.1				

TEST DATE SAMPLE DATE ANALYZED BY

SAMPLE	BPF 247	BPE 247	APC 246	ACP 247					
# Mls. USED	2:1 ~~10~~ 40	2:1 2	2:1 ~~25~~ 10	2:1 ~~5~~ 40					
(D.F.) DILUTION FACTOR	2.5	50	10	2.5					
ABSORBANCE	.107	.577	.398	.164					
(CONC.) (mg/l) CONCENTRATION									
(mg/l) (CONC.)x D.F.	.154	27.5	3.70	.291					

TEST DATE SAMPLE DATE ANALYZED BY

COMMENTS:

ALLIED PAPER (QUARTERLY)

PARAMETER	6/23/87	6/24/87	6/25/87	6/26/87	AVG
BOD mg/l	270	322	238	175	250
COD mg/l	519	-	452	314	428
TSS mg/l	22	24	12	12	18
pH	9.3	-	6.7	-	-
NH3-N mg/l	2.20	4.59	5.18	1.46	3.36
Cu ug/l	<10	<10	<10	<10	<10
Zn ug/l	50.	24	29	30.	33
Ag ug/l	<0.50	<0.50	<0.50	<0.50	<0.50

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1657

SAMPLERS: (Signature) Teresa P. Hamilton, Tim Muehlberg

PURPOSE OF ANALYSIS: Quarterly Sampling

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper	APC 17687	2-1L	6/26/87	9:20 AM	24		Metering Station / Cloudy, normal solids / Cam 6/26

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT ppb	ORGANIC COMPOUNDS		RESULT
X	pH			CADMIUM			EPA METHOD 601	
X	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	314 ppm	X	COPPER	<10			
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	1.46	X	ZINC	30		EPA METHOD 602	
	TOTAL P		X	SILVER	<0.50			
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS: pH → <2.0 with HNO_3

1 RELINQUISHED BY: (Signature) Tim Muehlberg	DATE/TIME 6/26/87 11:30 am	RECEIVED BY: (Signature)	DATE/TIME
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1642

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 17387	2 - 1L	6/23/87	9:15 AM	24 A		METER STA. / CLOUDY, NORMAL CONV SOLIDS metals

GENERAL/CONVENTIONAL		RESULT
X	pH	9.34
X	BOD	
	CBOD	
X	COD	519 ppm
X	TSS	
X	VSS	
X	NH_3-N	2.20
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT ug/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	50
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 6/23/87 11:27 AM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 6/23/87 11:24 AM	DATE/TIME
1 RELINQUISHED BY: (Signature) D.S. Hale	2 RELINQUISHED BY: (Signature)

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1645

SAMPLERS: (Signature) Donald S. Hale, Tim Heulenberg

PURPOSE OF ANALYSIS: Compliance monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 17487	2-1L	6/24/87	9:20 AM	24 A		METER. / CLOUDY, WHITE / CONV STA. / NORMAL SOLIDS / METALS

GENERAL/CONVENTIONAL		RESULT
X	pH	
X	BOD	
	CBOD	
X	COD	NR
X	TSS	
X	VSS	
X	NH_3-N	4.59 ppm
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT ug/l
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
X	COPPER	<10
	LEAD	
	NICKEL	
X	ZINC	24
X	SILVER	<0.50
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS	RESULT
	EPA METHOD 601
	EPA METHOD 602
	OTHER

REMARKS:

1 RELINQUISHED BY: (Signature) Tim Heulenberg	DATE/TIME 6/24/87 11:45 am	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME 6/24/87 11:45 am	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 6/24/87 11:45 am	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
	DATE/TIME		DATE/TIME

Time DATE

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale

PURPOSE OF ANALYSIS: Quarterly Monitoring

№ 1654

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 17587	2-1L	6/25/87	9:30 AM	24 A		METER STA. / CLOUDY, NORMAL SOLIDS / Conv

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT ppb	ORGANIC COMPOUNDS		RESULT
X	pH	6.7 DH		CADMIUM			EPA METHOD 601	
X	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	452 ppm	X	COPPER	<10			
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	5.18	X	ZINC	29		EPA METHOD 602	
	TOTAL P		X	SILVER	<0.50			
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) D.S. Hale	DATE/TIME 6/25/87 11:35 AM	RECEIVED BY: (Signature) [signature]	DATE/TIME 6/25/87 11:36 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

NH_3-N

SAMPLE	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.515	.538	.550	.557	.223	.237			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	49.8	.520	26.6	26.9	0.270	0.286			

TEST DATE 6-24-87 Sample Date 6-23-87 ANALYZED BY TW

K = .967

SAMPLE	Blank	PI	SE	TE	TEgrab	UPJ (Sample Date 6-22)			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.024	.522	.181	.149	.163	.632			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.029	25.2	0.846	0.691	0.759	76.4			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE	Blank	II (slightly turbid)	IE	Allied (17386)	BPE (17486)	LAK			
# Mls. Used	40	2:1 5	2:1 5	~~2:1~~ 10	2:1 5	2:1 10			
(D.F.) Dilution Factor	1.25	20	20	10	20	10			
Absorbance		.289	.561	.231	.549	.121			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		5.56	10.8	2.20	10.6	1.14			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

NH_3-N

"SAMPLE"	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.154	.564	.465	.464	.243	.209			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	14.9	0.545	22.5	22.4	0.294	0.253			

TEST DATE 6-25-87 Sample Date 6-24-87 ANALYZED BY TW

K = .967

"SAMPLE"	Blank	PI	SE	TE	TE grab	UPJ (Sample Date 6-23)			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.031	.471	.212	.179	.176	.620			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.037	22.7	0.988	0.828	0.814	74.9			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

Possible Interferences

cloudy

17587

"SAMPLE"	Blank	II	IE	Allied (17487)	ACI	BPF (TW)	BHI	LAK	
# Mls. Used	40	2:1 5	2:1 5	2:1 10	2:1, 25:1 (10)	2:1 40	2:1 40	2:1 20	
(D.F.) Dilution Factor	1.25	20	20	10	6250	2.5	2.5	5	
Absorbance		.495	.290	.479	.095	.133	.147	.115	
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		9.54	5.57	4.59	574.1	0.285	0.318	0.519	

TEST DATE _____ Sample Date _____ ANALYZED BY _____

NH_3-N

SAMPLE	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.527	.556	.543	.528	.190	.378			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	51.0	0.538	26.3	25.5	0.230	0.457			

TEST DATE 6-26-87 Sample Date 6-25-87 ANALYZED BY TW

K = .967

SAMPLE	Blank	PI	SE	TE	TEgrab	UPJ (Sample Date 6-24)			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.020	.456	.157	.138	.144	NO SAMPLE			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.024	22.0	0.735	0.643	0.672				

TEST DATE _____ Sample Date _____ ANALYZED BY _____

cloudy

SAMPLE	Blank	II	IE	Allied 17587	LAK 17687				
# Mls. Used	40	2:1 5	2:1 5	2:1 5	no die 10				
(D.F.) Dilution Factor	1.25	20	20	20	5				
Absorbance		.254	.570	.269	.071				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		4.89	11.0	5.18	0.319				

TEST DATE _____ Sample _____ ANALYZED BY _____

NH_3-N

SAMPLE	Rec.	Std.	P.E.	P.E.	PAT	MOS			
# Mls. Used	10:1 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.599		.513	.496	.234	.316			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	57.9		24.8	24.0	0.283	0.382			

TEST DATE 6-27-87 Sample Date 6-26-87 ANALYZED BY BOD

K = .967

SAMPLE	Blank	PI	SE	TE	TEgrab	UPJ (Sample Date 6-25)			
# Mls. Used	40	2:1 2	10	10	10	5:1 2			
(D.F.) Dilution Factor	1.25	50	5	5	5	125			
Absorbance	.028	.470	.129	.112	.124	.594			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.034	22.7	0.590	0.508	0.566	71.8			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE	Blank	II	IE	Allied 17687	LAK 17787				
# Mls. Used	40	2:1 5	2:1 5	2:1 10	2:1 40				
(D.F.) Dilution Factor	1.25	20	20	10	2.5				
Absorbance		.154	.184	.155	.147				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		2.94	3.52	1.46	0.321				

TEST DATE _____ Sample Date _____ ANALYZED BY _____

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1277

SAMPLERS: (Signature) Cal Longcore, Hussam Qasem

PURPOSE OF ANALYSIS: Route, Daily, Quarterly

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper Company	APC 06D87	1 — 1L	3/2/87	10:22 AM	24A		Metering Station

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
X	pH	7.33		CADMIUM			EPA METHOD 601	
	BOD			TOTAL CHROMIUM				
X	~~CBOD~~			HEX. CHROME				
X	COD	453 mg/l		COPPER				
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	1.45		ZINC			EPA METHOD 602	
	TOTAL P			SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)	DATE/TIME 3/2/87 12:02 pm	DATE/TIME
RECEIVED BY: (Signature) Robert Mc Cuff	RECEIVED BY: (Signature)	DATE/TIME 3/2/87 12:02 pm	DATE/TIME
1 RELINQUISHED BY: (Signature) Cal Longcore	2 RELINQUISHED BY: (Signature)		

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

SAMPLERS: (Signature) Donald S. Hale, Hassan Ansari

PURPOSE OF ANALYSIS: Quarterly

№ 1281

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	ALLIED PAPER	APC 06187	1-1L	3/3/87	9:25 AM	24 A		METER. STA. / CLOUDY, NORMAL SOLIDS / CONV

GENERAL/CONVENTIONAL		RESULT
	pH	
X	BOD	
	CBOD	
	COD	180 mg/l
X	TSS	
X	VSS	
X	NH_3-N	1.19
	TOTAL P	
	ORTHO P	
	GREASE/OIL	
	CHLORIDE	
	CN - TOTAL	
	CN - AMENABLE	

TRACE METALS		RESULT
	CADMIUM	
	TOTAL CHROMIUM	
	HEX. CHROME	
	COPPER	
	LEAD	
	NICKEL	
	ZINC	
	SILVER	
	MERCURY	
	BERYLLIUM	
	BARIUM	

ORGANIC COMPOUNDS		RESULT
	EPA METHOD 601	
	EPA METHOD 602	
	OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	3/13/87 11:05 AM	DATE/TIME	
RECEIVED BY: (Signature)	M. [illegible]	RECEIVED BY: (Signature)	
DATE/TIME	3/13/87 11:05 AM	DATE/TIME	
1 RELINQUISHED BY: (Signature)	D.S. Hale	2 RELINQUISHED BY: (Signature)	

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1288

SAMPLERS: (Signature) Cal Longcore, Nasseem Ansari

PURPOSE OF ANALYSIS: Daily Route - Quarterly

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied paper Company	APC 06287	1 - 1L	3/4/87	9:15 AM	24A		Cloudy Normal Solids / Metering Station / Quarterly

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
	pH	CL 4.5		CADMIUM			EPA METHOD 601	
X	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	NR.		COPPER				
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	1.10		ZINC			EPA METHOD 602	
	TOTAL P			SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

DATE/TIME		DATE/TIME	
RECEIVED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME	
3 RELINQUISHED BY: (Signature)		4 RELINQUISHED BY: (Signature)	
DATE/TIME	3/4/87 11:27 AM	DATE/TIME	
RECEIVED BY: (Signature)	Jeri Hyde	RECEIVED BY: (Signature)	
DATE/TIME	3/4/87 11:27 AM	DATE/TIME	
1 RELINQUISHED BY: (Signature)	Cal Longcore	2 RELINQUISHED BY: (Signature)	

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1285

SAMPLERS: (Signature) Col Longcore, Hassan Ansari

PURPOSE OF ANALYSIS: Daily Route Quarterly

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper Co.	APC 06387	1 – 1L	3/5/87	9:30 AM	24A		Metering station

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
	pH	CL 7.10		CADMIUM			EPA METHOD 601	
X	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	142 mg/l		COPPER				
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	.933		ZINC			EPA METHOD 602	
	TOTAL P			SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

1 RELINQUISHED BY: (Signature) Col Longcore	DATE/TIME 3/5/87 11:40 AM	2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME 3/5/87 11:40 AM	4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Form 1015

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1298

SAMPLERS: (Signature) Cal Longcore

PURPOSE OF ANALYSIS: Daily Route Quarterly

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Allied Paper Company	APC 06487	1 – 1L	3/6/87	9:45 AM	24A		Metering station / Milky white.

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
	pH	Cl 6.85		CADMIUM			EPA METHOD 601	
+	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
X	COD	194 mg/l		COPPER				
X	TSS			LEAD				
X	VSS			NICKEL				
X	NH_3-N	1.54		ZINC			EPA METHOD 602	
	TOTAL P			SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS:

DATE/TIME	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME	DATE/TIME
3 RELINQUISHED BY: (Signature)	4 RELINQUISHED BY: (Signature)
DATE/TIME 3/6/87 1:30 PM	DATE/TIME
RECEIVED BY: (Signature)	RECEIVED BY: (Signature)
DATE/TIME 3/6 87 1:30 PM	DATE/TIME
1 RELINQUISHED BY: (Signature) Cal Longcore	2 RELINQUISHED BY: (Signature),

Form 1015

NH_3-N

SAMPLE	Rec.	Std.	PrI. EFF.	PrI. EFF.	Ind. INF.	Ind. EFF.	Pat.	Mos.
# Mls. Used	10/1 thru 10	5	1	1	5	5	40	40
(D.F.) Dilution Factor	100 ~~50~~	1	50	50	10	10	1.25	1.25
Absorbance	.811	.502	.533	.576			.054	* .224
(Conc.) (mg/l) Concentration	.774	.479	.508	.550			.052	.214
(mg/l) (Conc.) x D.F.	77.4	.479	25.4	27.5			.064	.267

TEST DATE 3-4-87 SAMPLE DATE 3-3-87 ANALYZED BY BOD

~~*do~~ turbid

K = .954

SAMPLE	Blk	PrI. INF.	Sec. EFF.	Tert. EFF.	SAMPLE DATE 3-2 upJohn	TE grab
# Mls. Used	40	2:1 2	25	25	5:1 2	25
(D.F.) Dilution Factor	1.25	50	2	2	125	2
Absorbance	.021	.478	.684	.606	.534	.646
(Conc.) (mg/l) Concentration	.020	.456	.653	.578	.509	.616
(mg/l) (Conc.) x D.F.	.025	22.8	1.28	1.13	63.7	1.21

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	Blk	II	IE	3-2- Allied	06287 Herc
# Mls. Used	40	2:1 5	2:1 5	2:1 10	5:1 10
(D.F.) Dilution Factor	1.25	20	20	10	25
Absorbance	.042	.160	.113	.130	.049
(Conc.) (mg/l) Concentration	.040	.153	.108	.124	.047
(mg/l) (Conc.) x D.F.	.050	3.00	2.11	1.19	1.12

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

NH_3-N

SAMPLE	REC	Std.	P.E.	P.E.	MOS	PAT			
# Mls. Used	10:1 Dilu 5	5	1	1	40	40			
(D.F.) Dilution Factor	100 ~~50~~ Bn	1	50	50	1.25	1.25			
Absorbance	.554	.552	.704	.741	.182	.157			
[Conc.] (mg/l) Concentration	.532	.530	.677	.712	.175	.151			
(mg/l) [Conc.] x D.F.	53.2	.530	33.8	35.6	.219	.189			

TEST DATE 3-5-87 Sample Date 3-4-87 ANALYZED BY BOD

ℓ = .961

Sample Date: 3-3

SAMPLE	BL	P.I.	S.E.	T.E.	UPJ	T.E. GRAB			
# Mls. Used	40	2:1 2	10 ~~25~~	10 ~~25~~	5:1 2	25			
(D.F.) Dilution Factor	1.25	50	5 ~~2~~ Bn	5 ~~2~~ Bn	125	2			
Absorbance	.051	.591	.571	.542	.574	1.124			
[Conc.] (mg/l) Concentration	.049	.568	.549	.521	.552	.1080			
(mg/l) [Conc.] x D.F.	.061	28.3	2.68	2.54	68.9	2.10			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE	BL	II	IE	3-3 Allied	3-3 Allied	06387 Herc	06387 Herc		
# Mls. Used	40	2:1 5	2:1 5	2:1 10	2:1 20	5:1 10	5:1 20		
(D.F.) Dilution Factor	1.25	20	20	10 ~~50~~ Bn	5	25	12.5		
Absorbance	.059	.204	.134	.077	.209	.236	.538		
[Conc.] (mg/l) Concentration	.057	.196	.129	.074	.201	.227	.517		
(mg/l) [Conc.] x D.F.	.071	3.85	2.51	.669 ~~3.63~~ Bn	.933	5.60	6.39		

TEST DATE _____ Sample Date _____ ANALYZED BY _____

NH_3-N

SAMPLE#	REC	Std.	P.E.	P.E.	MOS	PAT	Rec		
# Mlc. Used	1	5	1	1	40	40	10:1 then 10		
(D.F.) Dilution Factor	50	1	50	50	1.25	1.25	100		
Absorbance	1.244	.509	.625	.618	.154	.175	.567		
(Conc.) (mg/l) Concentration	→	.489	.601	.594	.148	.168	.545		
(mg/l) (Conc.) x D.F.		.489	30.0	29.7	.185	.210	54.5		

TEST DATE 3-6-87 Sample Date 3-5-87 ANALYZED BY Boo

$R = .961$

Sample Date: 3-4

SAMPLE#	BL	P.I.	S.E.	T.E.	UPJ	T.E. GRAB			
# Mlc. Used	40	2:1 2	~~25~~ 10	~~25~~ 10	5:1 2	~~25~~ 10			
(D.F.) Dilution Factor	1.25	50	~~2~~ 5	~~2~~ 5	125	~~2~~ 5			
Absorbance	.067	.492	.563	.506	.593	.509			
(Conc.) (mg/l) Concentration	.064	.473	.541	.486	.570	.489			
(mg/l) (Conc.) x D.F.	.080	23.6	2.63	2.35	71.2	2.37			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

SAMPLE#	BL	II	IE	Allied 3-4	Herc 06487	1			
# Mlc. Used	40	2:1 5	2:1 5	2:1 then 20	5:1 then 20				
(D.F.) Dilution Factor	1.25	20	20	5	~~25~~ 12.5 Bo				
Absorbance	.056	.259	.181	.335	.232				
(Conc.) (mg/l) Concentration	.054	.249	.174	.322	.223				
(mg/l) (Conc.) x D.F.	.067	4.91	3.41	1.54	~~.554~~ 2.73 Bo				

TEST DATE _____ Sample Date _____ ANALYZED BY _____

NH_3 - N

SAMPLE	REC	Std.	P.E.	P.E	MOS	PAT			
# Mls. Used	10:1 ~~1~~ 5	5	1	1	40	40			
(D.F.) Dilution Factor	100	1	50	50	1.25	1.25			
Absorbance	.593	.516	.693	.679	.173	.161			
(Conc.) (mg/l) Concentration	.566	.492	.661	.648	.165	.154			
(mg/l) (Conc.) x D.F.	56.6	.492	33.1	32.4	.206	.192			

TEST DATE 3-7-87 Sample Date 3-6-87 ANALYZED BY [illegible]

ℓ = .454

SAMPLE	BL	P.I.	S.E.	T.E.	Sample Date: UPJ	T.E. GRAB			
# Mls. Used	40	2:1 2	~~25~~ 10	10 25	5:1 2	~~25~~ 10			
(D.F.) Dilution Factor	1.25	50	~~2~~ 5	5 ~~2~~	125	~~25~~			
Absorbance	.032	.506	.584	.577	.567	.583			
(Conc.) (mg/l) Concentration	.031	.483	.557	.550	.541	.556			
(mg/l) (Conc.) x D.F.	.038	24.1	2.75	2.71	67.6	2.74			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

3-4 · 06587

SAMPLE	BL	II	IE	ALLIED	Here				
# Mls. Used	40	2:1 5	2:1 5	2:1 25	5:1 25				
(D.F.) Dilution Factor	1.25	20	20	4	10				
Absorbance		.272	.214	.298	.241				
(Conc.) (mg/l) Concentration		.259	.204	.284	.230				
(mg/l) (Conc.) x D.F.		5.15	4.05	1.10	2.26				

TEST DATE _____ Sample Date _____ ANALYZED BY _____

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
1415 N. Harrison
Kalamazoo, Michigan 49007
616-385-8157

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

№ 1017

SAMPLERS: (Signature) John Ward

PURPOSE OF ANALYSIS: Special monitoring

ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION, DESCRIPTION & REMARKS
1	Aluied (gw)	special	1 liter	12/18/86	9 30 Am		✓	Discharge from pipe Behind weir

GENERAL/CONVENTIONAL		RESULT	TRACE METALS		RESULT	ORGANIC COMPOUNDS		RESULT
	pH			CADMIUM			EPA METHOD 601	
	BOD			TOTAL CHROMIUM				
	CBOD			HEX. CHROME				
	COD			COPPER				
X	TSS	8340 *		LEAD				
	VSS			NICKEL				
	NH_3-N			ZINC			EPA METHOD 602	
	TOTAL P			SILVER				
	ORTHO P			MERCURY				
	GREASE/OIL			BERYLLIUM				
	CHLORIDE			BARIUM				
	CN - TOTAL							
	CN - AMENABLE						OTHER	

REMARKS: - This is a special grab sample - solids only to be run

1 RELINQUISHED BY: (Signature) John Ward	DATE/TIME 12/18 12 35 AM
2 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature) Geri Hyde	DATE/TIME 12/18 12 35 AM
RECEIVED BY: (Signature)	DATE/TIME
3 RELINQUISHED BY: (Signature)	DATE/TIME
4 RELINQUISHED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME
RECEIVED BY: (Signature)	DATE/TIME

Form 1015

* Ave. of 2 results

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 33586

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Company "Quarterly"

	DATE:	TIME:	BY:
Collected by:	12-2-86		Ward / Hamilton
Received by:	12-2-86	11:15 AM	MK
Reported by:			

SAMPLE SITE: Sigma Auto Sampler @ Metering Station

METHOD OF SAMPLING: 24 hr Mech. Comp.

DESCRIPTION OF SAMPLE:

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	323			
				Diss COD				
	METALS	**RESULT**		**SOLIDS & MISC.**	**RESULTS**			**RESULTS**
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	2.75
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury			pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent McHinger

Address:

Phone: ext. 117

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 3336.86

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Company "Quarterly"

	DATE:	TIME:	BY:
Collected by:	12-3-86	9:15 AM	Ward / Hamilton
Received by:	12-3-86	11:35 AM	SSH
Reported by:			

SAMPLE SITE: Sigma Auto Sampler @ Metering Station

METHOD OF SAMPLING: 24 hr Mech. Comp.

DESCRIPTION OF SAMPLE: cloudy; normal solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	406			
				Diss COD				
	METALS	**RESULT**		**SOLIDS & MISC.**	**RESULTS**			**RESULTS**
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	1.72
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury			pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent McFinger

Address:

Phone: ext. 117

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 33736

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Company "Quarterly"

	DATE:	TIME:	BY:
Collected by:	12-4-86	10:00 AM	Ward/Hamilton
Received by:	12-4-86	11:38 AM	MK
Reported by:			

SAMPLE SITE: Sigma Auto Sampler @ Metering Station.

METHOD OF SAMPLING: 24hr Mech. Comp.

DESCRIPTION OF SAMPLE: Cloudy; milky-white; normal solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	738			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	2.75
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury			pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent McHinger

Address:

Phone: ext. 117

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 33886

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Company "Quarterly"

	DATE:	TIME:	BY:
Collected by:	12-5-86	9:15 AM	Ward / Hamilton
Received by:	12-5-86	11:26 AM	MR
Reported by:			

SAMPLE SITE: Sigma Auto Sampler @ Metering Station.

METHOD OF SAMPLING: 24hr Tech. Comp.

DESCRIPTION OF SAMPLE: Cloudy; milky-white; normal solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	367			
				Diss COD				
	METALS	**RESULT**		**SOLIDS & MISC.**	**RESULTS**			**RESULTS**
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	2.26
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury			pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent McHinger

Address:

Phone: ext. 107

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

NH_3-N

SAMPLE#	Rec.	Std.	Pri. Eff.	Pri. Eff.	Ind. Inf.	Ind. Eff.	Pat.	Mos.	
# Mls. Used	1	5	1	1	5	5	40	40	
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25	
Absorbance	.529	.511	.450	.436	see	Below	.138	.161	
(Conc.) (mg/l) Concentration	.509	.492	.433	.420			.123	.155	
(mg/l) (Conc.) x D.F.	25.5	.492	21.7	21.0			.154	.194	

TEST DATE 12-3-86 SAMPLE DATE 12-2-86 ANALYZED BY BOD

K = .963

SAMPLE#	Blk	Pri. Inf.	Sec. Eff.	Tert. Eff.	Sample Date 12-1 UpJohn				
# Mls. Used	40	2:1 2	25	25	5:1 2				
(D.F.) Dilution Factor	1.25	50	2	2	125				
Absorbance	* .133	.538	.878	* .943	.379				
(Conc.) (mg/l) Concentration	.128	.518	.846	.908	.365				
(mg/l) (Conc.) x D.F.	.160	25.9	1.69	1.82	45.6				

*cloudy

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

* Not used in calculations.

#336

SAMPLE#	Blk	II	IE	Allied	CLS	DMC			
# Mls. Used	40	2:1 10	2:1 10	2:1 10	2:1 5	2:1 2			
(D.F.) Dilution Factor	1.25	10	10	10	20	50			
Absorbance	* .143	.496	.478	.286	.259	.799			
(Conc.) (mg/l) Concentration	.138	.478	.460	.275	.249	.769			
(mg/l) (Conc.) x D.F.	.172	4.78	4.60	2.75	4.99	38.5			

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

NH_3-N

SAMPLE*	Rec.	Std.	PrI. EFF.	PrI. EFF.	Ind. INF.	Ind. EFF.	Pat.	Mos.
# Mls. Used	1	5	1	1	5	5	40	40
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25
Absorbance	.528	.561	.518	.502	distilled		.179	.187
(Conc.) (mg/l) Concentration								
(mg/l) (Conc.) x D.F.	25.4	.540	24.9	24.2			.215	.225

TEST DATE 12-4-86 SAMPLE DATE 12-3-86 ANALYZED BY TMC

K = .963

SAMPLE*	* Blk	* PrI. INF.	* Sec. EFF.	* Tert. EFF.	SAMPLE DATE 12-2-86 upJohn
# Mls. Used	40	2:1 2	25	25	5:1 2
(D.F.) Dilution Factor	1.25	50	2	2	125
Absorbance	.012	.551	.863	.815	.474
(Conc.) (mg/l) Concentration					
(mg/l) (Conc.) x D.F.	.014	26.5	1.65	1.56	57.1

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE*	Ind Blk	33786 DMC	CLS337 CLS	II	* IE	Allied
# Mls. Used	40	2:1 2	2:1 5	2:1 10	10	2:1 10
(D.F.) Dilution Factor	1.25	50	20	10	5	10
Absorbance	.063	.596	.114	.321	.465	.186
(Conc.) (mg/l) Concentration						
(mg/l) (Conc.) x D.F.	.076	28.6	2.12	3.02	2.18	1.72

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

NH_3 - N

SAMPLE#	REC	Std.	P.E.	P.E.	MOS	PAT			
# Mls. Used	1	5	1	1	40	40			
(D.F.) Dilution Factor	50	1	50	50	1.25	1.25			
Absorbance	.690	.527	.541	.519	.120	.118			
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	33.2	.508	26.0	25.0	.145	.142			

TEST DATE _____ Sample Date _____ ANALYZED BY _____

Sample Date:

SAMPLE#	BL	P.I.	S.E.	T.E.	UPJ	IE	II		
# Mls. Used	40	2:1 2	25	25	5:1 2	10	10		
(D.F.) Dilution Factor	1.25	50	2	2	125	5	5		
Absorbance	.059	.520	.588	.434	see	.386	.580		
(Conc.) (mg/l) Concentration					below				
(mg/l) (Conc.) x D.F.	.071	25.0	1.06	.765		1.79	2.72		

TEST DATE 12-5-86 Sample Date 12-4-86 ANALYZED BY TMC

33886 12-3-86

SAMPLE#	BL	DMC	CLS	Allied	Upjohn				
# Mls. Used	40	2:1 2	2:1 5	2:1 10	5:1 2				
(D.F.) Dilution Factor	1.25	50	20	10	125				
Absorbance	.046	.765	.434	.291	.475				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.055	36.8	8.30	2.75	57.1				

TEST DATE 12-4-86 Sample Date 12-4-86 ANALYZED BY TMC

NH_3-N

SAMPLE	REC	Std.	P.E.	P.E.	MOS	PAT			
# Mls. Used	1	5	1	1	40	40			
(D.F.) Dilution Factor	50	1	50	50	1.25	1.25			
Absorbance	.678	NR	.486	.516	N	S			
(Conc.) (mg/l) Concentration	.653		.478	.497					
(mg/l) (Conc.) x D.F.	32.7 ~~23.8~~		23.9	24.9					

TEST DATE 12-6-86 Sample Date 12-5-86 ANALYZED BY BOD

K = .963

SAMPLE	BL	P.I.	S.E.	T.E.	UPJ (Sample Date: 12-4-86)	IE	II		
# Mls. Used	40	2:1 2	25	25	5:1 2	10	10		
(D.F.) Dilution Factor	1.25	50	2	2	125	5	5		
Absorbance	.042	.617	.405	.347	.695	.192	.212		
(Conc.) (mg/l) Concentration	.040	.594	.390	.334	.669	.185	.204		
(mg/l) (Conc.) x D.F.	.051	29.7	.729	.618	83.6	1.80	1.99		

TEST DATE _____ Sample Date _____ ANALYZED BY _____

33986 12-4-86

SAMPLE	BL	DMC	CLS	Allied		BLK	CRAG 3° EFF		
# Mls. Used	40	2:1 2	2:1 5	2:1 10		40	25		
(D.F.) Dilution Factor	1.25	50	20	10		1.25	2		
Absorbance	.062	.716	.220	.242		.026	.328		
(Conc.) (mg/l) Concentration	.060	.690	.212	.233		.025	.316		
(mg/l) (Conc.) x D.F.	.075	34.4	4.16	2.26		.031	.600		

TEST DATE 12-5-86 Sample Date 12-5-86 ANALYZED BY TMC

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 22386

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Company

	DATE:	TIME:	BY:
Collected by:	TST 8/12/86	10:10 AM	WARD/HAMILTON
Received by:	8/12/86	12:59 PM	MK
Reported by:	8-26-86		GSH

SAMPLE SITE: Sigma Auto Sampler @ Metering Station

METHOD OF SAMPLING: 24 hr Mech. Comp.

DESCRIPTION OF SAMPLE:

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	365			
				Diss COD				
	METALS	**RESULT**		**SOLIDS & MISC.**	**RESULTS**			**RESULTS**
	Cadmium			SS			All as N or P	
	Chromium		X	VSS		X	Ammonia	.90
	Copper		X	TSS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent McKinger

Address:

Phone: ext. 117

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

APC

LABORATORY SAMPLE # 22486

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied. Paper Co

	DATE:	TIME:	BY:
Collected by:	~~JW/CL~~ 8/13/86	9:10 Am	JW/CL
Received by:	8/13/86	11:56 Am	MK
Reported by:	8-26-86		JSH

SAMPLE SITE: Allied Metering Station

METHOD OF SAMPLING: Mech 24 Hour Composite

DESCRIPTION OF SAMPLE: Clear

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	388			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	3.4
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent Mottinger

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 22586

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper

	DATE:	TIME:	BY:
Collected by:	8/1/86	9:30 AM	JW / CL
Received by:	8/1/8.	1130 AM	
Reported by:	8-26-86		

SAMPLE SITE: Metering station

METHOD OF SAMPLING: Mech 24 composite

DESCRIPTION OF SAMPLE: Clear

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	467			
				Diss COD				
	METALS	**RESULT**		**SOLIDS & MISC.**	**RESULTS**			**RESULTS**
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	2.3
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent Mottinger

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # APC 22686

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied paper CO.

	DATE:	TIME:	BY:
Collected by:	8/15/86	9:30	JW/CL
Received by:	8/15/86	11:55 pm	mk
Reported by:	8-26-86		JSH

SAMPLE SITE: Metering Station

METHOD OF SAMPLING: Mech 24 composite

DESCRIPTION OF SAMPLE: Cloudy white, Normal Solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD	382			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	TSS			All as N or P	
	Chromium		X	VSS		X	Ammonia	4.0
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	
	Silver							
	Beryllium							

SPECIAL

Report results to: Kent Mottinger

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

$NH_3 - N$

SAMPLE	Recycle	Standard (.500)	Pri. Eff.	Pri. Eff.	Indust. Inf.	Indust. Eff.	Paterson	Mosel	
# Mls. Used	1	5	1	1	5	5	40	40	
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25	
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

K = .943 New Nesslers in use 8-14-86

SAMPLE	Blank	PRI INF.	Sec. Eff.	Tert. Eff.	UPJOHN				
# Mls. Used	40	2:1		25	5:1 2				
(D.F.) Dilution Factor	1.25			2	125				
Absorbance	* .216			.170 ~~Bor .187~~	.187				
(Conc.) (mg/l) Concentration				.160	.176				
(mg/l) (Conc.) x D.F.				.3	22.0				

TEST DATE 8-14-86 SAMPLE DATE 8-12-86 ANALYZED BY Bob

* Blank distillation spot was used for industrial sample. May have contaminated cooling column. Blank not subtracted from absorbances.

SAMPLE	Savage 22486	Allied 8/11/86							
# Mls. Used	2:1 10 ml ~~25 ml~~	2:1 10							
(D.F.) Dilution Factor	10	20							
Absorbance	.255	.050							
(Conc.) (mg/l) Concentration	.240	.047							
(mg/l) (Conc.) x D.F.	2.4	.9							

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

$NH_3 - N$

SAMPLE	Recycle	Standard (.500)	Pri. Eff.	Pri. Eff.	Indust. Inf.	Indust. Eff.	Paterson	Mosel	
# Mls. Used	1	5	1	1	5	5	40	40	
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25	
Absorbance	.513		.499	.499	.263	.275	.207	.145	
(Conc.) (mg/l) Concentration	.484	NR	.471	.471	.248	.259	.195	.137 ~~.145~~ Bod	
(mg/l) (Conc.) x D.F.	24.2		23.5	23.5	2.5	2.6	.2	.2	

TEST DATE 8-14-86 SAMPLE DATE 8-13-86 ANALYZED BY Bod

K = .943 new Nessler's {in use 8-14-86

Flocked

SAMPLE	Blank	PRI INF.	Sec. Eff.	Tert. Eff.	UPJOHN				
# Mls. Used	40	2:1 BOD 1	25	25	5:1 2				
(D.F.) Dilution Factor	1.25	50	2	2	125				
Absorbance	*.216	.925	.401 ~~.401~~ Bod	.285	.350				
(Conc.) (mg/l) Concentration		.872	.378	.269	.330				
(mg/l) (Conc.) x D.F.		43.6	.8	.5	41.3				

TEST DATE 8-14-86 SAMPLE DATE 8-13-86 ANALYZED BY Bod

Blank not subtracted from values.

* 8-13-86 Problems with distillation radiator, had to use 'Blank' spot for ~~samples~~ BOD industrial samples 8/13/86 P.M. Ran Blank 8-14-86 Am

∴ May have residual from distillation 8/13/86 P.M. in Blank of 8/14/86 Am

SAMPLE	SAVAGE 22586	KALSTRA 22586	LRE 225-86	Allied 8-12-86	KMF 22586	SAVAGE 22586			
# Mls. Used	2:1 20	2:1 5	5:1 (10-450) 2	2:1 10	2:1 10	2:1 10			
(D.F.) Dilution Factor	5	20	625	10	10	10			
Absorbance	.753	.331	.569	.364	.200	.392			
(Conc.) (mg/l) Concentration	.710	.312	.537	.343	.189	.370			
(mg/l) (Conc.) x D.F.	3.6	6.2	335.4	3.4	1.9	3.7			

TEST DATE 8-14-86 SAMPLE DATE _____ ANALYZED BY Bod

$NH_3 - N$

SAMPLE	Recycle	Standard (.500)	Pri. Eff.	Pri. Eff.	Indust. Inf.	Indust. Eff.	Paterson	Mosel	
# Mls. Used	1	5	1	1	5	5	40	40	
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25	
Absorbance	.542	.592	.473	.483	.208	.186	.195	.189	
(Conc.) (mg/l) Concentration	.511	.558	.446	.455	.196	.175	.184	.178	
(mg/l) (Conc.) x D.F.	25.6	.5 BOP	22.3	22.8	2.0	1.8	.2	.2	

TEST DATE 8-15-86 SAMPLE DATE 8-14-86 ANALYZED BY BOP

K = .943 new Nessler's

SAMPLE	Blank	PRI INF.	Sec. Eff.	Tert. Eff.	UPJOHN	Flocked 1° IFF	Flocked 2° EFF		
# Mls. Used	40	2:1 2		25	5:1 2	1	25		
(D.F.) Dilution Factor	1.25	NR	NR	2	125	50	2		
Absorbance	.090			.249	.489	.509	.278		
(Conc.) (mg/l) Concentration	.085			.235	.461	.480	.262		
(mg/l) (Conc.) x D.F.	.1			.4	57.5	24.0	.5		

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE	KSAD 22686	LRE 22686	KMF 22686	SAVAGE 22686	Allied 8-13-86				
# Mls. Used	2:1 5	5:1 (10 750) 2	2:1 10	2:1 10	2:1 10				
(D.F.) Dilution Factor	20	625	10	10	10				
Absorbance	.756	.526	.081 ~~.080~~	.119	.258				
(Conc.) (mg/l) Concentration	.713	.496	.076	.112	.243				
(mg/l) (Conc.) x D.F.	14.2	309.9	.7	1.0	2.3				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

$NH_3 - N$

SAMPLE	Recycle	Standard (.500)	Pri. Eff.	Pri. Eff.	Indust. Inf.	Indust. Eff.	Paterson	Mosel	
# Mls. Used	1	5	1	1	5	5	40	40	
(D.F.) Dilution Factor	50	1	50	50	10	10	1.25	1.25	
Absorbance	0.426	N.R.	0.412	0.397	0.147	0.186	N.S	N.S	
(Conc.) (mg/l) Concentration	.402 ~~.39~~		.389	.374	.139	.175			
(mg/l) (Conc.) x D.F.	20.1		19.4	18.7	1.4	1.8			

TEST DATE 8-16-86 SAMPLE DATE 8-15-86 ANALYZED BY G-L

K = .943

SAMPLE	Blank	PRI INF.	Sec. Eff.	Tert. Eff.	UPJOHN				
# Mls. Used	40	2:1 2	25	25	5:1 2				
(D.F.) Dilution Factor	1.25	50	2	2	125				
Absorbance	0.000	0.603	0.219	0.105	0.163				
(Conc.) (mg/l) Concentration		.569	.207	.099	.154				
(mg/l) (Conc.) x D.F.		28.4	.4	.2	19.2				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

KAL

SAMPLE	SAVAGE 22786	SAD 22786	Allied 8-14-86	KMF 22786	LRE 22786				
# Mls. Used	2:1 20	2:1 5	2:1 10	2:1 25	5:1 (10→50) 2 mls				
(D.F.) Dilution Factor	5	20	10	4	625				
Absorbance	0.075	0.578	0.422	0.663	0.433				
(Conc.) (mg/l) Concentration	.071	.545	.398	.625	.408				
(mg/l) (Conc.) x D.F.	.4	10.9	4.0	2.5	255.2				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

Allied Paper File

SEG

SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M.	Inmont INM11788
	04/25/88	04/25/88	04/26/88
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1

SEG Number:	75240	75241
Tag:	Allied Paper Clarifier APC 11788	Upjohn Bishop Rd. UJB11788
	04/26/88	04/26/88
PCB-1016, ug/L	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1

Approved by Lori A. Vachon
Lori A. Vachon

LAV/jp

1120 May Street, Lansing, Michigan 48906 • (517) 374-6800 • CABLE "SNELL" • TELEX 229458
A Snell Environmental Group Company

SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M.	Inmont INM11788
	04/25/88	04/25/88	04/26/88
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1

SEG Number:	75240	75241
Tag:	Allied Paper Clarifier APC 11788	Upjohn Bishop Rd. UJB11788
	04/26/88	04/26/88
PCB-1016, ug/L	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1

Approved by Lori A. Vachon
Lori A. Vachon

LAV/jp

1120 May Street, Lansing, Michigan 48906 • (517) 374-6800 • CABLE "SNELL" • TELEX 229458

ALLIED PAPER COMPANY

Date	4/14/86	4/15/86	4/16/86	4/17/86	Ave
BOD mg/l	530	285	440	320	390
COD mg/l	445	893	640	416	600
TSS mg/l	711	30	50	36	200
VSS mg/l	208	16	26	30	70
pH	6.9	6.7	7.1	6.6	-
NH_3 mg/l	5.34	1.78	.962	4.53	3.15
Ortho P mg/l	-	.086	.077	.070	.078
Cd ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Cu ug/l	42	60.	<10	<10	26
Pb ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Zn ug/l	22	31	<10	<10	13
As ug/l	8.0	<5.0	<5.0	<5.0	<5.0
Ag ug/l	<0.50	0.72	<0.50	1.1	<.50

KWRP METALS REPORT

SAMPLES: ALLIED PAPER CO

SAMPLE LOCATIONS:

(1) APC 104PC Date: 4/14/PC 14

(2) APC105PC Date: 4/15/PC 15

(3) APC106PC Date: 4/17/PC 16

(4) APC107PC Date: 4/17/PC 17

(5) _____ Date: _____

Lab I.D. / Parameters		(1) APC 104PC	(2) APC 105PC	(3) APC 106PC	(4) APC 107PC	(5)
Cadmium	✓	<0.50	<0.50	<0.50	<0.50	
Chromium						
Copper		42	60	<10	<10	
Lead	✓	<5.0	<5.0	<5.0	<5.0	
Nickel						
Zinc	✓	22	31	<10	<10	
Arsenic	✓	8.0	<5.0	<5.0	<5.0	
Selenium						
Silver	✓	<0.50	0.72	<0.50	1.14	
Mercury						
Iron						
Beryllinm						
Cyanide						

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

* AFC

LABORATORY SAMPLE # 10586

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co

	DATE: 14	TIME: gmw	BY:
Collected by:	4/15/86	11:30 ~~11:45~~ A.M	Jerry Ward
Received by:	4-15-86	1:35PM	JSH
Reported by:	4-30-86		JSH

SAMPLE SITE: Sigma Auto sampler @ metering station

METHOD OF SAMPLING: 24 hr. mech comp.

DESCRIPTION OF SAMPLE: 4 liters cloudy white liquid

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD 530	~~285~~		Phenols	
	Coliform			Diss BOD			PCB	
			✓	COD	445			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
✓	Cadmium		✓	SS 711	~~734~~		All as N or P	
	Chromium			VSS 208	~~228~~	✓	Ammonia	5.34
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead			Sett. Solids			Nitrite	
	Mercury		✓	pH	6.9		Tot. Kjeldahl	
	Nickel					✓	Total P	NR
✓	Zinc					✓	Ortho P	N.R.
✓	Silver							
	Beryllium							

SPECIAL Arsenic

* note sample is dated previous day in keeping with normal industrial route procedures

Report results to: Joan Eldred (HT 108)

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

APC

LABORATORY SAMPLE # 10586 (ST)

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co.

	DATE: (ST)	TIME:	BY:
Collected by:	4/15/86	11:35 AM.	Jerry Ward
Received by:	~~4-15~~ 4-16-86	1:55 PM	Jeri Hyde
Reported by:	4-30-86		JSH

SAMPLE SITE: Sigma Auto Sampler @ Metering Station

METHOD OF SAMPLING: 24 hr. auto. composite

DESCRIPTION OF SAMPLE: White Cloudy Solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD	285		Phenols	
	Coliform			Diss BOD			PCB	
			✓	COD	893			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
✓	Cadmium		✓	TSS	30		All as N or P	
	Chromium			VSS	16	✓	Ammonia	1.78
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead			Sett. Solids			Nitrite	
	Mercury		✓	pH	6.7		Tot. Kjeldahl	
	Nickel					✓	Total P	NR
✓	Zinc					✓	Ortho P	.086
✓	Silver							
	Beryllium							

SPECIAL Arsenic

Report results to: Jean Eldred (EXT 108)

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

APC

LABORATORY SAMPLE # 10686

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co

	DATE:	TIME:	BY:
Collected by:	4/16/86	11:30 AM	Jerry Ward
Received by:	4-17-86	1:35 PM	JSH
Reported by:	4-30-86		JSH

SAMPLE SITE: Sigma Auto Sampler @ Metering Station

METHOD OF SAMPLING: 24 hr Mech Comp

DESCRIPTION OF SAMPLE: 8 liters white cloudy liquid

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD	440		Phenols	
	Coliform			Diss BOD			PCB	
			✓	COD	640			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
✓	Cadmium		✓	TSS	50		All as N or P	
	Chromium			VSS	26	✓	Ammonia	.962
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead			Sett. Solids			Nitrite	
	Mercury		✓	pH	7.1		Tot. Kjeldahl	
	Nickel					✓	Total P	NR
✓	Zinc					✓	Ortho P	.077
✓	Silver							
	Beryllium							

SPECIAL Arsenic

Report results to: Jean Eldred (EXT 108)

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-55

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co.

	DATE:	TIME:	BY:
Collected by:	3/19/85	3:30 PM	P. Salamun / D. Hale
Received by:	3-19-85	4:00 PM	9SA
Reported by:			

SAMPLE SITE: MH downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: CLOUDY, WHITE COLOR, SUS. & SETT. SOLIDS

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT (ppb)		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS			All as N or P	
	Chromium		X	VSS			Ammonia	
X	Copper	87		TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	11		Sett. Solids			Nitrite	
	Mercury		X	pH	7.51		Tot. Kjeldahl	
	Nickel			Metals pH	<2	X	Total P	
X	Zinc	125				X	Ortho P	

SPECIAL

Report results to: G. Eldred

Address:

Phone:

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-57

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co.

	DATE:	TIME:	BY:
Collected by:	3/21/85	2:45	P. Sahagmun / J. Eldred
Received by:	3-21-85	3:58PM	
Reported by:	4-16-85		JSH

SAMPLE SITE: M.H. downstream from Clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: cloudy - white/grey, sus. & sett. solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD	186		Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS	259		All as N or P	
	Chromium		X	VSS	220		Ammonia	
X	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH	7.84		Tot. Kjeldahl	
	Nickel		X	Metal pH	<2.0	X	Total P	4.12
X	Zinc					X	Ortho P	2.30

SPECIAL

Report results to: J. Eldred

Address:

Phone:

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-57

(UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co.

	DATE:	TIME:	BY:
Collected by:	3/21/85	2 PM	P. Sahamun / J. Eldred
Received by:	3-21-85	3:30 PM	
Reported by:			

SAMPLE SITE: M.H. downstream from Clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: cloudy-white/grey, sus. & sett. solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT (ppb)		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS			All as N or P	
	Chromium		X	VSS			Ammonia	
X	Copper	128		TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	<10		Sett. Solids			Nitrite	
	Mercury		X	pH	7.84		Tot. Kjeldahl	
	Nickel		X	Metal pH	<2.0	X	Total P	
X	Zinc	317				X	Ortho P	

SPECIAL

Report results to: J. Eldred

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-58

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co

	DATE:	TIME:	BY:
Collected by:	3/22/85	2 pm	P. Salamun / J. Eldred
Received by:	3-22-85	3:15	PSH
Reported by:	4-16-85		PSH

SAMPLE SITE: MH. downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: gray/white, sett. & sus. solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD	165		Phenols	
	Coliform			Diss BOD			PCB	
			X10	COD				
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS	125		All as N or P	
	Chromium		X	VSS	93		Ammonia	
X	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH	8.02		Tot. Kjeldahl	
	Nickel			pH Metals		X	Total P	
	Zinc					X	Ortho P	
X								

SPECIAL

Report results to: J. Eldred

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-58

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co

	DATE:	TIME:	BY:
Collected by:	3/22/85	2 pm	Salamun / J. Eldred
Received by:	3-22-85	3:15	
Reported by:			

SAMPLE SITE: MH. downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: gray/white, sett. & sus. solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD			Phenols	
	Coliform			Diss BOD			PCB	
			X	COD				
				Diss COD				

	METALS	ppb RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS			All as N or P	
	Chromium		X	VSS			Ammonia	
X	Copper	113		TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	14		Sett. Solids			Nitrite	
	Mercury		X	pH	802		Tot. Kjeldahl	
	Nickel			pH Metals		X	Total P	
X	Zinc	1938				X	Ortho P	

SPECIAL

Report results to: J. Eldred

Address:

Phone:

-21 (white) Lab Records (yellow) Requester's Copy (blue)

ALLied Phos

SAMPLE	Blank	~~Stand~~		C-55		Sample	Blank		
# Mls. Used	50mls	50 ~~25~~		3ml		100%			
(D.F.) Dilution Factor	1								
Absorbance	.038			.797					
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.				4.09					

TEST DATE 3-20-85 SAMPLE DATE 3-19-85 ANALYZED BY JDH

ORTHO

SAMPLE	Blank	Stand	C-55		Sample Blank				
# Mls. Used	50mls	50	5mls		5mls				
(D.F.) Dilution Factor	1	1	10						
Absorbance	.002	.776	.609		.072				
(Conc.) (mg/l) Concentration			1.73						
(mg/l) (Conc.) x D.F.	—	0.~~238~~ 0.250	~~1.84~~ 1.61		—				

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

Ortho

SAMPLE	BLANK	STD	S.BL	C-56	C-56				
# Mls. Used	50	25	5	5	5				
(D.F.) Dilution Factor	1		10	10	10				
C-56 Absorbance	0.005	0.780	0.064	0.851	0.848				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	0.002	0.250	~~2.53~~ 2	2.53	2.53				

TEST DATE 3-21-85 SAMPLE DATE 3-20-85 ANALYZED BY Glane

Total

SAMPLE	BLANK	STD	S.BL	C-56	C-56				
# Mls. Used	50	25	3	3	3				
(D.F.) Dilution Factor	1		16.7	16.7	16.7				
C-56 Absorbance	0.044	0.823	0.015	0.860	0.867				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	0.014	0.252	<	4.32	4.36				

TEST DATE 3-21-85 SAMPLE DATE 3-20-85 ANALYZED BY Glane

ALLIED

Phosphorus

C-57 P TOTAL

SAMPLE	BL	STD	S.BL	C-57	C-57				
# Mls. Used	50	50	3	3	3				
(D.F.) Dilution Factor	—	—	16.7	16.7	16.7				
Absorbance	0.032	0.812	0.061	0.849	0.866				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	—	0.252	—	4.08	4.17				

TEST DATE 3 22 85 SAMPLE DATE 3-21-85 ANALYZED BY Glane

C-57 P. ORTHO

SAMPLE	BL	STD	S.BL	C-57	C-57				
# Mls. Used	50	50	5	5	5				
(D.F.) Dilution Factor	—	—	10	10	10				
Absorbance	0.006	0.784	0.095	0.810	0.813				
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	—	0.251		2.29	2.30				

TEST DATE 3-22-85 SAMPLE DATE 3 21-85 ANALYZED BY Glane

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

P-Total

SAMPLE	BL	STD	S.BL	C-58	C-58				
# Mls. Used	50	50	3	3	3				
(D.F.) Dilution Factor	—	—	16.7	16.7	16.7				
Absorbance	.018	.792	.029	.686	.653				
(Conc.) (mg/l) Concentration				3.45	3.27	AVG:	3.36		
(mg/l) (Conc.) x D.F.	—	0.250	—	3.18	3.00				

TEST DATE 3-23-85 SAMPLE DATE 3-22-85 ANALYZED BY JDH

C-58 P.ORTH

SAMPLE	BL	STD	S.BL	C-58	C-58				
# Mls. Used	50	50	3	3	3				
(D.F.) Dilution Factor	—	—	.029	16.7	16.7				
Absorbance	-.002	.778	.029	.439	.451				
(Conc.) (mg/l) Concentration			—						
(mg/l) (Conc.) x D.F.		0.251	—	2.20	2.27				

TEST DATE 3-23-85 SAMPLE DATE 3-22-85 ANALYZED BY JDH

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

Allied Paper

KALAMAZOO WASTEWATER TREATMENT PLANT
D.O. & B.O.D.

K-10 REV. 3-15-6

DATE TEST DUE _____ DATE OF ANALYSIS _____

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
3/20	Blank (SEEDED)	0	33	8.6/8.5	0.1	—	—	5	1.000		
	I.D.# C-55	10	87	8.6/0.8	7.6	228	228				Sample Date: 3-19-85
	no dilu	20	385	8.3/0.1	8.2	—	—				Sample Ran: 3-20-85
	" "	30	147	8.0/0.3	7.7	—	—				Due Date: 3-25-85
											Analyst: BOD/BOD
	BLANK (Seeded)	0	44	8.6/8.6	0.0	—	—	5	1.000		
	I.D.# C-56	10	124	8.4/3.5	4.9	147	147				Sample Date: 3-20-85
	no dilu	20	131	8.3/0.3	8.0	—	—				Sample Ran: 3-21-85
	" "	30	527	7.9/0.2	7.7	—	—				Due Date: 3-26-85
											Analyst: BOD/BOD
	BLANK (Seeded)	0	519	8.6/8.6	0.0	—	—	5	1.000		
	I.D.# C-57	5	89	8.6/5.6	3.0	180	186				Sample Date: 3-21-85
	no dilu	10	58	8.5/2.1	6.4	192	—				Sample Ran: 3-22-85
	" "	20	2	8.2/0.8	7.4	—	—				Due Date: 3-27-85
	" "	30	103	8.0/0.6	7.4	—	—				Analyst: BOD/
	BLANK (Seeded)	0	66	8.5/8.4	0.1	—		5	1.000		
	I.D.# C-58	5	32	8.4/1.7	0.7	—	—				Sample Date: 3-22-85
	no dilu	10	118	8.9/2.8	5.5	165	165				Sample Ran: 3-23-85
	" "	20	270	8.2/1.03	—	—	—				Due Date: 3-28-85
	" "	30	91	8.0/0.1	—	—	—				Analyst: DH/
	BLANK (Seeded)	0						5	1.000		
	I.D.#										Sample Date:
											Sample Ran:
											Due Date:
											Analyst:

ANAL. BY _____

DAY _____

DATE

KALAMAZOO WASTEWATER TREATMENT PLANT

SUSPENDED SOLIDS ANALYSIS – PRIMARY allied paper E-37 REV. 10/78

SAMPLE SOURCE	NEW INF.	NEW EFF.	IND. INF.	IND. EFF.	C-55	C-55 (Dupe)	
DISH NO./D.F.	x	x	x	x	74 x 4	DD x 4	x
WT. DISH & SOLIDS					16.0283	17.4622	
WT. DISH					16.0259	17.4598	
MG./L. SOLIDS					96	96	
% REDUCTION					96		
WT. DISH & SOLIDS							
WT. DISH & ASH					16.0273	17.4609	
MG./L. VOL. SOLIDS					40	52	
% VOL. SOLIDS					46		
pH							

SECONDARY

SAMPLE SOURCE	C-56 ~~SEC. EFF.~~	C-56 (Dupe) ~~SEC. EFF.~~	RETURN	C-57 ~~MIXED LIQ.~~	C-57 (Dupe) ~~THIC. EFF.~~	C-58 ~~RIV. PAT.~~	C-58-Dupe ~~RIV. MOSEL~~
DISH NO.	m$ x 2	F6 x 2	x	BB x 2	BRD x 2	To6 x 2	# x 2
WT. DISH & SOLIDS	17.2411	18.3003		17.4349	15.6400	17.9729	17.6994
WT. DISH	17.2332	18.2923		17.4222	15.6268	17.9666	17.6932
MG./L. SOLIDS	158	160		254	264	126	124
% REDUCTION	159			259		125	
WT. DISH & SOLIDS							
WT. DISH & ASH	17.2350	18.2943		17.4243	15.6286	17.9680	17.6950
MG./L. VOL. SOLIDS	122	120		212	228	98	88
% VOL. SOLIDS	121			220		93	
pH							

PAPER MILLS

SAMPLE SOURCE	JAMES RIV.	GEO. PAC.	UPJ. - BISH.	ALLIED			
DISH NO.	x	x	x	x	x	x	
WT. DISH & SOLIDS							
WT. DISH							
MG./L. SOLIDS							
WT. DISH & SOLIDS							
WT. DISH & ASH							
MG./L. VOL. SOLIDS							
% VOL. SOLIDS							
pH							

ANAL. BY: _____ DAY: _____ DATE: _____

CITY OF KALAMAZOO

WASTEWATER TREATMENT | INDUSTRIAL SURVEILLANCE

ACCOUNT: Allied Paper Inc.

ADDRESS:

COMPANY REPRESENTATIVE:

CITY INSPECTOR:

-I500 1680-

SAMPLE DATES: BEGIN 3/18/85 END 3/22/85

SAMPLER MAP #:

BATTERY #: CHANGED (DAY): Battery was changed every day.

-Downstream sampler-

SAMPLE	TIME ON	DATE	TIME OFF	DATE	pH
#1	3 20 pm	3/18/85	3 30 pm	3/19/85	
REMARKS: white, cloudy, sus. & sett solids 8 liters					
#2	3 25 pm	3/19/85	3 50 pm	3/20/85	
REMARKS: white, cloudy, sus & sett. solids. 2 liters					
#3	3 55 pm	3/20/85	2 45 pm	3/21/85	
REMARKS: gray-white, cloudy, sus. & sett. solids 4 liters					
#4	2 50 pm	3/21/85	2 05 pm	3/22/85	
REMARKS: gray-white, cloudy, sus. & sett. solids 4 liters					
#5					
REMARKS:					

FINAL REMARKS: upstream m.H. depth — approx. 22 ft.
downstream m.H. depth - approx. 15 ft.

*upstream sampler did not collect any samples during the entire week.

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY-SAMPLE # APC 10786

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co

	DATE:	TIME:	BY:
Collected by:	4/17/86	11:30 A.M	Jerry Ward
Received by:	4-18-86	11:55AM	JSH
Reported by:	4-30-86		JSH

SAMPLE SITE: Sigma Auto Sampler @ metering station

METHOD OF SAMPLING: 24 Hr. mech comp.

DESCRIPTION OF SAMPLE:

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD	320		Phenols	
	Coliform			Diss BOD			PCB	
			✓	COD	416			
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
✓	Cadmium		✓	SS	36		All as N or P	
	Chromium			VSS	30	✓	Ammonia	4.53
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead			Sett. Solids			Nitrite	
	Mercury		✓	pH	6.6		Tot. Kjeldahl	
	Nickel					✓	Total P	NR
✓	Zinc					✓	Ortho P	.070
✓	Silver							
	Beryllium							

SPECIAL Arsenic

Report results to: Jean Eldred (ALT 108)

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

Po

SAMPLE	DMC	KSD	BLS	FILTER					
# Mls. Used	4	5	50:2	50					
(D.F.) Dilution Factor	12.5	10	250	1					
Absorbance	.718	.452	.201	.220					
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	2.85	1.44	16.0	.070					

TEST DATE 4/2/92 SAMPLE DATE 4/1/92 ANALYZED BY TP

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

NH_3-N ALLIED

SAMPLE	Blank	10586							
# Mls. Used	40	2:1 10							
(D.F.) Dilution Factor	1.25	10							
Absorbance	.052	.579							
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.060	5.34							

TEST DATE 4-16-86 SAMPLE DATE 4-15-86 ANALYZED BY TW

K=.932

SAMPLE	Blank	10686							
# Mls. Used	40	2:1 10							
(D.F.) Dilution Factor	1.25	10							
Absorbance		.195							
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.		1.78							

TEST DATE 4-17-86 SAMPLE DATE 4-16-86 ANALYZED BY TC

SAMPLE	Blank	10786							
# Mls. Used	40	2:1 10							
(D.F.) Dilution Factor	1.25	10							
Absorbance	.046	.101							
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.054	.962							

TEST DATE 4-18-86 SAMPLE DATE 4-15-86 ANALYZED BY TC

17

K-44 4/82

Allied N 3-N

SAMPLE	Blank	10886							
# Mls. Used	40	2:1 10							
(D.F.) Dilution Factor	1.25	10							
Absorbance	.038	.491							
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.	.044	4.53							

TEST DATE 4-19-86 SAMPLE DATE 4-17-86 ANALYZED BY TW

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

SAMPLE									
# Mls. Used									
(D.F.) Dilution Factor									
Absorbance									
(Conc.) (mg/l) Concentration									
(mg/l) (Conc.) x D.F.									

TEST DATE _____ SAMPLE DATE _____ ANALYZED BY _____

Cl^- Results (ppm)

Sample date	Geo. Pac.	Allied	Upjohn
2-23-86	126	112	536
2-24	108	119	798
2-25	119	118	944
2-26	126	113	774
2-27	110	117	1260
2-28	112	119	810
3-1	151	106	556/551
3-2	138	107	563
3-3	143	119	1030

More Upjohn + J.R. to follow... next week

Allied Paper

metals background data not sent.

date	9-24-85	9-25-85	9-26-85	9-27-85
Cd ug/l	0.8 ug/l	<0.5	<0.5	<0.5
Pb ug/l	7	<5	<5	5
Zn ug/l	139	40	18	133
As ug/l	<10	<10	<10	<10
Ag ug/l	1.1	2.1	1.9	2.8

CITY OF KALAMAZOO

WASTEWATER TREATMENT | INDUSTRIAL SURVEILLANCE

ACCOUNT: ALLIED PAPER

ADDRESS

COMPANY REPRESENTATIVE

CITY INSPECTOR

SAMPLE DATES BEGIN 9-23-85 END 9-27-85

SAMPLER MAP #

BATTERY # CHANGED (DAY) #

SAMPLE	TIME ON	DATE	TIME OFF	DATE	pH
#1	3:30 P/M	9-23-85	3:00 P/M	9-24-85	
REMARKS: CLOUDY; MILKY WHITE COLOR; FEW SOLIDS.					6.1
#2	3:05 P/M	9-24-85	3:00 P/M	9-25-85	
REMARKS: SAME DESCRIPTION					6.1
#3	3:05 P/M	9-25-85	2:30 P/M	9-26-85	
REMARKS: SAME DESCRIPTION					6.1
#4	2:35 P/M	9-26-85	2:30 P/M	9-27-85	
REMARKS: SAME DESCRIPTION					6.1
#5					
REMARKS:					

FINAL REMARKS:

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-202

QUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper, Inc

	DATE:	TIME:	BY:
Collected by:	9/24/85	3:00	P Salamas / K. Mottinger
Received by:	9/24/85	4:00 PM	BERG
Reported by:			

SAMPLE SITE: auto sampler @ metering station

METHOD OF SAMPLING: 24 hr mech comp.

DESCRIPTION OF SAMPLE: cloudy, lightly sus eset solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform			BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	ppb RESULT		SOLIDS & MISC.	RESULTS			RESULTS
X	Cadmium	.8		SS			All as N or P	
	Chromium			VSS			Ammonia	
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	7		Sett. Solids			Nitrite	
	Mercury			pH Metals	<2		Tot. Kjeldahl	
	Nickel						Total P	
X	Zinc	139					Ortho P	
X	Arsenic	<10						
X	Silver	1.1						

SPECIAL

Report results to: J Eldred

Address:

Phone: 108

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # 203

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Inc.

	DATE:	TIME:	BY:
Collected by:	9/25/85	3:01 PM	L. Salamun / D. Hate
Received by:	9/25/85	4:00 PM	Berg
Reported by:			

SAMPLE SITE: auto. sampler @ metering station

METHOD OF SAMPLING: 24 hr mech. comp.

DESCRIPTION OF SAMPLE: cloudy, white, susp. & sett. solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform			BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT ppb		SOLIDS & MISC.	RESULTS			RESULTS
X	Cadmium	<1.5		SS			All as N or P	
	Chromium			VSS			Ammonia	
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	<5		Sett. Solids			Nitrite	
	Mercury			pH Metals	<2		Tot. Kjeldahl	
	Nickel						Total P	
X	Zinc	40					Ortho P	
X	Silver	2.1						
	Beryllium							

SPECIAL Arsenic <10

Report results to: Jean Eldred

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 394 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C 205

QUESTED ANALYSIS

SAMPLE IDENTIFICATION [illegible]

	DATE:	TIME:	BY:
Collected by:	9/26/85	[illegible]	[illegible]
Received by:	9-26-85	4:15 PM	DEPG
Reported by:			

SAMPLE SITE: auto sampler [illegible] metering station

METHOD OF SAMPLING: [illegible]

DESCRIPTION OF SAMPLE: [illegible]

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform			BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				
	METALS	ppb RESULT		SOLIDS & MISC.	RESULTS			RESULTS
X	Cadmium	<.5		SS			All as N or P	
	Chromium			VSS			Ammonia	
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	<5		Sett. Solids			Nitrite	
	Mercury			pH Metals	<2		Tot. Kjeldahl	
	Nickel						Total P	
X	Zinc	18					Ortho P	
X	[illegible]	1.9						
	[illegible]	<10						

SPECIAL

Report results to: [illegible]

Address: [illegible]

Phone: [illegible]

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT
LAB ANALYSIS REPORT

LABORATORY SAMPLE # 6208

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION ALLIED PAPER

	DATE:	TIME:	BY:
Collected by:	9-27-85	2:25 P/m	SALAMUN / HALE
Received by:	9.27.85	2:30 PM	[illegible]
Reported by:			

SAMPLE SITE: AUTO. SAMPLER AT METERING STATION

METHOD OF SAMPLING: 24 HR. MECH. COMP.

DESCRIPTION OF SAMPLE: cloudy - white, sus & settled solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform			BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT ppb		SOLIDS & MISC.	RESULTS			RESULTS
X	Cadmium	<.5		SS			All as N or P	
	Chromium			VSS			Ammonia	
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead	5		Sett. Solids			Nitrite	
	Mercury			pH	7.03		Tot. Kjeldahl	
	Nickel						Total P	
X	Zinc	133					Ortho P	
X	Silver	2.8						
	Beryllium							

SPECIAL Arsenic <10

Report results to: JEAN ELDRED (EXT. 108)

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (pink) File Copy

Form 304 Rev. 6-15-84

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # G-74

QUESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Grab

	DATE:	TIME:	BY:
Collected by:	4-17-85	2:30 p.m.	Eldred
Received by:	4-17-85	3:10 PM	GJL
Reported by:			

SAMPLE SITE: allied Clarifier

METHOD OF SAMPLING: grab

DESCRIPTION OF SAMPLE: milky, high solids

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD	810		Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		✓	SS	2675		All as N or P	
	Chromium		✓	VSS	1295		Ammonia	
	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
	Lead			Sett. Solids			Nitrite	
	Mercury			pH			Tot. Kjeldahl	
	Nickel						Total P	
	Zinc						Ortho P	

SPECIAL Please rush

Report results to: Eldred x107

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (blue)

all'ed Grab Sample

KALAMAZOO WASTEWATER TREATMENT PLANT 4-17-85

SUSPENDED SOLIDS ANALYSIS – PRIMARY

E-37 REV. 10/78

SAMPLE SOURCE	NEW INF.	NEW EFF.	IND. INF.	IND. EFF.	C-74	C-74	
DISH NO./D.F.	x	x	x	x	VC x 10	BLANK x 10	x
WT. DISH & SOLIDS					23.1079	22.7569	
WT. DISH					23.0809	22.7304	
MG./L. SOLIDS					2700 270	2650	
% REDUCTION					2675		
WT. DISH & SOLIDS							
WT. DISH & ASH					23.0939	22.7433	
MG./L. VOL. SOLIDS					1300	1290	1295
% VOL. SOLIDS				sample date 4-17-85 analysis date 4-18-85			
pH					7.1	7.1	

SECONDARY

SAMPLE SOURCE	SEC. EFF.	SEC. EFF.	RETURN	MIXED LIQ.	THIC. EFF.	RIV. PAT.	RIV. MOSEL
DISH NO.	x	x	x	x	x	x	x
WT. DISH & SOLIDS							
WT. DISH							
MG./L. SOLIDS							
% REDUCTION							
WT. DISH & SOLIDS							
WT. DISH & ASH							
MG./L. VOL. SOLIDS							
% VOL. SOLIDS							
pH							

PAPER MILLS

SAMPLE SOURCE	JAMES RIV.	GEO. PAC.	UPJ. - BISH.	ALLIED			
DISH NO.	x	x	x	x	x	x	
WT. DISH & SOLIDS							
WT. DISH							
MG./L. SOLIDS							
WT. DISH & SOLIDS							
WT. DISH & ASH							
MG./L. VOL. SOLIDS							
% VOL. SOLIDS							
pH							

ANAL. BY: _____ DAY: _____ DATE: _____

Allied Soak

KALAMAZOO WASTEWATER TREATMENT PLANT
D.O. & B.O.D.

DATE TEST DUE 4-23-85 DATE OF ANALYSIS 4-23-85

TEST DATE	SAMPLE SOURCE	ML.	BOTT. NO.	D.O.	DEPLETION	TEST	AVE. MG./L.	DAYS	FACTOR	MG./L.	REMARKS
	Blank (SEEDED)	0	44	8.6/8.4	0.2	—	—	5	1.000		
	I.D.# C-74	10	89	8.6/0.2	8.4	257	259				Sample Date: 4-17-85
	NO D.I.	20	198	8.5/8.2	8.3	—	—				Sample Ran: 4-18-85
											Due Date: 4-23-85
											Analyst: QSA/BOD
	BLANK (Seeded)	0	44	8.9/8.4	0.2	—	—	5	1.000		
	I.D.# C-74	10	6	8.5/5.8	2.7	810	810				Sample Date: 4-17-85
	10: Dil	5	268	8.5/7.2	1.3	—	—				Sample Ran: 4-18-85
											Due Date: 4-23-85
											Analyst: QSA/BOD
	BLANK (Seeded)	0						5	1.000		
	I.D.#										Sample Date:
											Sample Ran:
											Due Date:
											Analyst:
	BLANK (Seeded)	0						5	1.000		
	I.D.#										Sample Date:
											Sample Ran:
											Due Date:
											Analyst:
	BLANK (Seeded)	0						5	1.000		
	I.D.#										Sample Date:
											Sample Ran:
											Due Date:
											Analyst:

Do not use.

ANAL. BY

DAY:

DATE

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-55

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied Paper Co.

	DATE:	TIME:	BY:
Collected by:	3/19/85	3:30 PM	P. Salamun/D. Hale
Received by:	3-19-85	4:00 PM	GSA
Reported by:	4-16-85		GSA

SAMPLE SITE: MH downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE: CLOUDY, WHITE COLOR, SUS. & SETT. SOLIDS

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		X	BOD	228		Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium		X	SS	96		All as N or P	
	Chromium		X	VSS	46		Ammonia	
X	Copper			TS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
X	Lead			Sett. Solids			Nitrite	
	Mercury		X	pH	7.51		Tot. Kjeldahl	
	Nickel			Metals pH		X	Total P	4.09
X	Zinc					X	Ortho P	1.73

SPECIAL

Report results to: J. Eldred

Address:

Phone:

(white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-56

UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied PAPER

	DATE:	TIME:	BY:
Collected by:	3-20-85	3:50pm	P. SALAMUN / D. HALE
Received by:	3-20-85	4:30pm	DERC
Reported by:	4-16-85		9511

SAMPLE SITE: MH downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE:

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD	147		Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				

	METALS	RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium			SS	159		All as N or P	
	Chromium		✓	VSS	121		Ammonia	
✓	Copper		✓	TSS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead			Sett. Solids			Nitrite	
	Mercury		✓	pH	8.54		Tot. Kjeldahl	4.34
	Nickel			pH metals	1.44	✓	Total P	~~2.53~~
✓	Zinc					✓	Ortho P	2.53

SPECIAL

Report results to: Elared

Address:

Phone: 107

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

KALAMAZOO WASTEWATER TREATMENT PLANT

LAB ANALYSIS REPORT

LABORATORY SAMPLE # C-56

(UESTED ANALYSIS

SAMPLE IDENTIFICATION Allied PAPER

	DATE:	TIME:	BY:
Collected by:	3-20-85	3:50pm	P. SALAMUN / D. HALE
Received by:	3-20-85	4:30pm	DERC
Reported by:			

SAMPLE SITE: MH downstream from clarifier

METHOD OF SAMPLING: 24 hr. mech. comp.

DESCRIPTION OF SAMPLE:

	BACTERIA	RESULT		BOD - COD	RESULT		ORGANIC COMPOUNDS	RESULTS
	Fecal Coliform		✓	BOD			Phenols	
	Coliform			Diss BOD			PCB	
				COD				
				Diss COD				
(								

	METALS	ppb RESULT		SOLIDS & MISC.	RESULTS			RESULTS
	Cadmium			SS			All as N or P	
	Chromium			VSS			Ammonia	
✓	Copper	121	✓	TSS			Org. Kjeldahl	
	Iron			TVS			Nitrate	
✓	Lead	<10		Sett. Solids			Nitrite	
	Mercury		✓	pH	8.54		Tot. Kjeldahl	
	Nickel			pH metals	1.44	✓	Total P	
✓	Zinc	673				✓	Ortho P	

SPECIAL

Report results to: Elared

Address:

Phone: 107

E-21 (white) Lab Records (yellow) Requester's Copy (blue)

THE CITY OF
Kalamazoo

DEPARTMENT OF PUBLIC UTILITIES
Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
(616) 385-8157

Certified Mail #P 430 809 584

February 6, 1989

Performance Papers, Incorporated
2030 Portage Street
Kalamazoo, Michigan 49001
ATTN: Richard Eaton

Dear Mr. Eaton:

In response to state and federal requirements governing the City of Kalamazoo's Industrial Pretreatment Program (IPP), final Administrative Orders are being issued for all significant industrial users (SIUs) of the City of Kalamazoo Water Reclamation Plant (KWRP). Administrative Orders are the main control mechanism used by the City to monitor and regulate discharges into the sanitary sewer system. Compliance with all aspects of the Administrative Order is required for all significant industrial users in order to continue to receive wastewater service.

Several key items need to be mentioned reqarding the format and content of these Administrative Orders.

1. The first three (3) pages of the Administrative Order deal with general discharge and reporting requirements for all significant industrial users. These items and conditions must be review closely by the industrial user to ensure that the appropriate procedures are followed as needed to maintain compliance with the Administrative Order.

2. Several specific attachments are part of each Administrative Order issued to industrial users and must also be reviewed carefully.

   A. Attachment A details the specific discharge limits for each individual industrial user. Specific local discharge limitations and/or federal categorical pretreatment standards will apply to such discharges and will be outlined and included in this attachment.

   B. Attachment B is lists any site-specific requirments that will be needed to ensure compliance with all applicable standards by the industrial user. A "Compliance Schedule" may be included that must be met completely by the listed Final Compliance Date in order to maintain wastewater service. If this section is labeled "Reserved" (that is, not filled in) for a given industrial user, continued compliance will be monitored with any future requirements detailed in a reissued Administrative Order or Compliance Order.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST.
	KALAMAZOO, MI 49001
Phone:	616-345-7131
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

Discharge Standards:

Specific limits on pollutants discharged to the sanitary sewer are presented in **Attachment A.**

Compliance Schedule:

Areas of non-compliance must be resolved on an approved timetable. These items (if any) are included in **Attachment B.**

Monitoring and Reporting:

User shall install and maintain necessary monitoring equipment. User shall perform any required waste stream sampling and analyses. Self-monitoring reports may also be required. Specifics for each of these items are given in **Attachment C.**

Notification of Process Changes: Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes that may substantially affect wastewater flow or quality. Process changes are defined as major plant expansions or modifications, which result in the discharge of new pollutants or the introduction of higher quantities of existing pollutants. All process changes that could significantly increase flow or significantly lower wastewater quality must be approved by the Department of Public Utilities prior to implementation.

Notification of Slug Discharges: Immediate notification must be given to the Department of Public Utilities of any spills, slug loads or upsets in pretreatment processes that affect wastewater discharge to the sanitary sewer. You must monitor your processes and activities to assure prompt detection of any problems. The telephone number to call is 385-8157, day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within three (3) working days following the event. The reporting address is the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007.

Monitoring Authority:

User shall allow access by authorized Utilities Department staff members 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is reason to believe a discharge or violation is occurring, for inspecting all operations and records, copying records, and observing and sampling wastewater discharges.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to **Attachment C** for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

POLLUTANT		DAILY MAXIMUM CONCENTRATION LIMIT MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Mercury	(Hg)	0.250

II. Process-specific Discharge Limitations:

These limitations apply to all regulated process discharge(s) within the facility. Please refer to **Attachment C** for specific "end-of-process" sample location(s).

Pretreatment standards for Pulp, Paper, and Paperboard Category, Non-integrated Fine Papers, existing sources (40CFR Part 430.186):

User shall provide certification that pentachlorophenolic- or trichlorophenolic-based biocides are not used. If these biocides are used, daily maximum discharge concentration limits will be applied. Application of the discharge limits would require the submission of detailed production and operation data.

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "C": MONITORING REQUIREMENTS

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Sample Location:

Metering station on north side of Bryant Mill clarifier.

VIOLATIONS SUMMARY SHEET

INDUSTRY: Performance Papers

DATE:	VIOLATION DESCRIPTION	ENFORCEMENT ACTION TAKEN
4/17/89	pH discharge = 5.7	Bruce F. Merchant
4/19/89	pH discharge = 12.7	Called Performance Papers
	See letter regarding pH violations from BOD to CLS SNC	compliance schedule to install pretreatment
8/8/89	Grease and Oil TRC violation (546 mg/l)	
8/10/89	Grease and Oil TRC violation (489 mg/l)	
11/8, 9/89		Sent order not to discharge slug loads during plant closure, Several inspections to verify

COMPLIANCE SCHEDULE

INDUSTRY: Performance Papers ADDRESS: _____

TASK	DATE DUE	DATE ACCOMPLISHED	COMPLIANCE COMMEN
Submit plan for pH neutralization	10/15/89		
Final Compliance with all limits	11/30/89		

DISCHARGE COMPLIANCE SAMPLING RECORD

NAME Performance Papers

ID CODE APC

APPLICABLE STANDARDS:
LOCAL LIMITS
end-of-pipe

PARAMETER	Cadmium			Chromium		
	Daily	*	TRC	Daily	*	TRC
LIMITS (ug/l)	40	*	48	4670	*	5604
DATE	RESULTS		*SNC*	RESULTS		*SNC*
3/7/89	.18			BDL		
3/8/89	BDL					
3/9/89	.18	SM				
3/10/89	.10					
6/20/89	<0.20			<2.0		
6/21/89	1.2			<2.0		
6/22/89	.46			<2.0		
6/23/89	<0.20			<2		
~~8/8/89~~						
quarterly ~~8/9/89~~						
Sampling ~~8/10/89~~						
~~8/11/89~~						
5/15/90	1.7			<20		
5/16/90	1.9			<20		

DISCHARGE COMPLIANCE SAMPLING RECORD

NAME Performance Papers

ID CODE APC

APPLICABLE STANDARDS:
LOCAL LIMITS
end-of-pipe

PARAMETER	Nickel			Mercury		
	Daily	*	TRC	Daily	*	TRC
LIMITS (ug/l)	1590	*	1908	250	*	300
DATE	RESULTS		*SNC*	RESULTS		*SNC*
3/7/89	BDL			BDL		
3/8/89						
3/9/89						
3/10/89						
6/20/89	<5.0			<0.50		
6/21/89	<5.0			<0.50		
6/22/89	<5.0			<0.50		
6/23/89	<5.0			<0.50		
5/15/90	<50			<.5		
5/16/90	<50			<.5		

DISCHARGE COMPLIANCE SAMPLING RECORD

NAME Performance Papers

ID CODE APC

Note: pH monitored daily by Route crew.

APPLICABLE STANDARDS:
LOCAL LIMITS
end-of-pipe

PARAMETER	pH S.U.			G & O mg/l		
	Daily	*	TRC	Daily	*	TRC
LIMITS ~~(mg/l)~~	6.2-9.8 ~~40~~	*	~~48~~ 6.0-10.0	~~4670~~	*	~~5604~~
DATE	RESULTS	*SNC*		RESULTS	*SNC*	
3/7/89	7.90	*		4.81	*	
3/8/89	7.40	*			*	
3/9/89	7.30	*		2.82	*	
3/10/89	7.20	*			*	
6/20/89	7.4	*		1.14	*	
6/21/89	6.7	*		2.90	*	
6/22/89	7.3	*		4.70	*	
6/23/89	10.3	*	XX	—	*	
7/31/89	7.1	*			*	
8/8/89	10.7	*	XX	<1 546	*	XX
8/9/89	6.4	*		~~55~~ no sample	*	
8/10/89	6.6	*		489	*	XX
8/11/89	6.6	*		—	*	
5/15/90	9.4	*		—	*	
5/16/90	11.1	*		—	*	

DISCHARGE COMPLIANCE SAMPLING RECORD

NAME Performance Papers

ID CODE APC

SEE [illegible] FAXA FOR pH Compliance

APPLICABLE STANDARDS:
LOCAL LIMITS
end-of-pipe

PARAMETER	Cadmium			~~Cadmium~~ pH		
	Daily	TRC		~~Daily~~	~~TRC~~	
LIMITS (ug/l)	40	48		~~4870~~	~~5604~~	
DATE	RESULTS		SNC	RESULTS		SNC
4/17/84				5.7	XX	
4/14/89				12.7	XX	

DISCHARGE COMPLIANCE SAMPLING RECORD

NAME________________________________

ID CODE__________

APPLICABLE STANDARDS:
LOCAL LIMITS
end-of-pipe

PARAMETER	Copper			Lead		
	Daily	TRC		Daily	TRC	
LIMITS (ug/l)	2230	2676		110	132	
DATE	RESULTS		*SNC*	RESULTS		*SNC*

BASELINE MONITORING REPORT (BMR)

Control Authority: City of Kalamazoo - Department of Public Utilities

(In accordance with 40 CFR Part 403.12(b))

I. IDENTIFYING INFORMATION:

NAME OF FACILITY: Performance Paper Co.
(Formerly Allied Paper Co)

FACILITY ADDRESS: 2030 Portage Street
~~Kalamazoo~~

CITY: Kalamazoo ~~Pa~~ STATE Mi ZIP 49001

NAME(S) OF OWNER(S) OR OPERATOR(S):

ADDRESS: (IF DIFFERENT FROM ABOVE)

CITY: STATE ZIP

II. LIST OF ENVIROMENTAL PERMITS:

List any and all enviromental permits held by or for the facility indicated above. Please also indicate what type of permit(s) are held (what they are for), who issued the permit(s) and when the permit(s) was issued plus the expiration date(s), if applicable. (Use additional pages if necessary)

TYPE OF PERMIT	PERMIT NUMBER	ISSUED BY	DATE ISSUED	EXPIRES
NPDES	MI0000779	MDNR	04/24/79	3/31/89

III. DESCRIPTION OF OPERATIONS:

A. Briefly describe below the nature of this facility's operations. Please use additional pages if necessary and attach any appropriate drawings, sketches or diagrams if needed to provide adequate details regarding these operations.

refer to Section II 2, III 1 and IV-5 of Industrial Pretreatment Inspection dated 7-16-87 (with attachments)

B. In the table below, detail the average rate of production along with the appropriate SIC (Standard Industrial Classification) Code(s) for operation(s) carried out by this facility. Please attach a schematic process diagram indicating all discharge points to the sanitary sewer. Use additional pages if necessary.

OPERATION	AVERAGE PRODUCTION RATE	SIC CODE
CFR # 430.186	aprox 260 tons/day	2621

see ad Industrial Pretreatment Insp for diagrams

IV. FLOW MEASUREMENT:

Please indicate below the measured average daily and maximum daily flows of all regulated processes and all other process flows necessary for the use of the Combined Wastesteam Formula (CWF - see 40 CFR Part 403.6(e)).

PROCESS (PLEASE INDICATE IF REGULATED OR NONREGULATED)	AVERAGE DAILY FLOW (INDICATE UNITS)	MAXIMUM DAILY FLOW
CFR # 430.186 (regulated for Pentachlorophenol)	2988 m^3	10,064 m^3 (4/18/89)

V. MEASUREMENT OF POLLUTANTS:

Identify all applicable Pretreatment Standards for all regulated processes detailed above. Please indicate below any results from sampling and analysis identifying the nature and concentration (or mass, where applicable) of regulated pollutants in the discharge from each regulated process. Both daily maximum and average concentrations (or mass) shall be reported and any samples collected for such analyses shall be representative of normal daily operations. Please also indicate the type of samples collect (i.e. composite, grab, etc...) and the frequency of the sample collection. Attach applicable laboratory reports and use additional pages if necessary.

APPLICABLE PRETREATMENT STANDARDS	DAILY MAX. CONCENTRATION (OR MASS)	AVERAGE CONCENTRATION (OR MASS)	TYPE OF SAMPLE	SAMPLING FREQUENCY
See attachment "A" Discharge Limitations sec II process specific discharge of Administrative Order. (see attached) For sampling results see attached data tables				

CITY OF KALAMAZOO
WASTEWATER SERVICE

ADMINISTRATIVE ORDER

ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:	PERFORMANCE PAPERS, INC.
Address:	2030 PORTAGE ST. KALAMAZOO, MI 49001
Contact Person:	RICHARD EATON
Date of Issue:	January 31, 1989

I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to **Attachment C** for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

POLLUTANT		DAILY MAXIMUM CONCENTRATION LIMIT MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Mercury	(Hg)	0.250

II. Process-specific Discharge Limitations:

These limitations apply to all regulated process discharge(s) within the facility. Please refer to **Attachment C** for specific "end-of-process" sample location(s).

Pretreatment standards for Pulp, Paper, and Paperboard Category, Non-integrated Fine Papers, existing sources (40CFR Part 430.186):

User shall provide certification that pentachlorophenolic- or trichlorophenolic-based biocides are not used. If these biocides are used, daily maximum discharge concentration limits will be applied. Application of the discharge limits would require the submission of detailed production and operation data.

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1,1-DICHLOROETHANE	1.700		ug/l	02/09/88	GRAB	09:45 AM
Mean	1.700					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1,2-DICHLOROPROPANE	4.200		ug/l	06/21/89	GRAB	08:45 AM
Mean	4.200					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1-1-1-TRICHLOROETHAN	48.000		ug/l	02/09/88	GRAB	09:45 AM
	37.000		ug/l	02/10/88	GRAB	09:35 AM
	9.300		ug/l	06/21/89	GRAB	08:45 AM
	1.900		ug/l	12/01/88	GRAB	08:50 AM
Mean	24.050					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	3.100		mg/l	02/09/88	24 HR COMP	09:45 AM
	3.660		mg/l	02/10/88	24 HR COMP	09:35 AM
	3.080		mg/l	02/11/88	24 HR COMP	09:25 AM
	1.320		mg/l	03/07/89	24 HR COMP	08:30 AM
	1.430		mg/l	03/08/89	24 HR COMP	08:30 AM
	1.320		mg/l	03/09/89	24 HR COMP	08:25 AM
	2.500		mg/l	03/10/89	24 HR COMP	09:05 AM
	1.230		mg/l	06/01/88	24 HR COMP	09:00 AM
	1.140		mg/l	06/02/88	24 HR COMP	08:45 AM
	1.390		mg/l	06/03/88	24 HR COMP	08:45 AM
	0.000	*	mg/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	mg/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	mg/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	mg/l	06/23/89	24 HR COMP	08:55 AM
	15.600		mg/l	08/01/88	COMP	09:00 AM
	2.390		mg/l	08/02/88	COMP	09:00 AM
	1.480		mg/l	08/03/88	COMP	09:00 AM
	2.540		mg/l	08/04/88	COMP	09:00 AM
	1.780		mg/l	11/29/88	24 HR COMP	09:00 AM
	2.410		mg/l	11/30/88	24 HR COMP	09:20 AM
	2.930		mg/l	12/01/88	24 HR COMP	09:00 AM
	2.090		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	2.336					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
BOD	288.000		mg/l	02/09/88	24 HR COMP	09:45 AM
	325.000		mg/l	02/10/88	24 HR COMP	09:35 AM
	338.000		mg/l	02/11/88	24 HR COMP	09:25 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	100.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	110.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	105.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	195.000		mg/l	03/10/89	24 HR COMP	09:05 AM
	235.000		mg/l	06/01/88	24 HR COMP	09:00 AM
	310.000		mg/l	06/02/88	24 HR COMP	08:45 AM
	192.000		mg/l	06/03/88	24 HR COMP	08:45 AM
	120.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	250.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	130.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	335.000		mg/l	08/01/88	COMP	09:00 AM
	310.000		mg/l	08/02/88	COMP	09:00 AM
	382.000		mg/l	08/03/88	COMP	09:00 AM
	420.000		mg/l	08/04/88	COMP	09:00 AM
	242.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	245.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	225.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	300.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	245.571					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CADMIUM	0.180		ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.180		ug/l	03/09/89	24 HR COMP	08:25 AM
	0.100		ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	1.200		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.460		ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.265					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHLOROFORM	1.800		ug/l	02/09/88	GRAB	09:45 AM
	3.600		ug/l	06/02/88	GRAB	08:45 AM
	4.500		ug/l	12/01/88	GRAB	08:50 AM
Mean	3.300					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	340.000		mg/l	02/09/88	24 HR COMP	09:45 AM
	483.000		mg/l	02/10/88	24 HR COMP	09:35 AM
	182.000		mg/l	02/11/88	24 HR COMP	09:25 AM
	152.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	158.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	187.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	321.000		mg/l	03/10/89	24 HR COMP	09:05 AM
	199.000		mg/l	06/01/88	24 HR COMP	09:00 AM
	267.000		mg/l	06/02/88	24 HR COMP	08:45 AM
	377.000		mg/l	06/03/88	24 HR COMP	08:45 AM
	142.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	164.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	210.000		mg/l	06/23/89	24 HR COMP	08:55 AM
	406.000		mg/l	08/01/88	COMP	09:00 AM
	413.000		mg/l	08/02/88	COMP	09:00 AM
	490.000		mg/l	08/03/88	COMP	09:00 AM
	621.000		mg/l	08/04/88	COMP	09:00 AM
	350.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	356.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	365.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	469.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	316.762					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	47.000		ug/l	02/09/88	24 HR COMP	09:45 AM
	44.000		ug/l	02/10/88	24 HR COMP	09:45 AM
	36.000		ug/l	02/11/88	24 HR COMP	09:25 AM
	32.000		ug/l	03/07/89	24 HR COMP	08:30 AM
	30.000		ug/l	03/08/89	24 HR COMP	08:30 AM
	38.000		ug/l	03/09/89	24 HR COMP	08:25 AM
	26.000		ug/l	03/10/89	24 HR COMP	09:05 AM
	431.000		ug/l	06/01/88	24 HR COMP	09:00 AM
	32.000		ug/l	06/02/88	24 HR COMP	08:45 AM
	21.000		ug/l	06/03/88	24 HR COMP	08:45 AM
	34.000		ug/l	06/20/89	24 HR COMP	08:35 AM
	20.000		ug/l	06/21/89	24 HR COMP	08:45 AM
	22.000		ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
	0.000	*	ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	32.000		ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	38.409					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CYANIDES	6.220		ug/l	03/07/89	GRAB	08:30 AM
	3.330		ug/l	03/08/89	GRAB	08:30 AM
	3.330		ug/l	03/09/89	GRAB	08:25 AM
	5.580		ug/l	03/10/89	GRAB	09:05 AM
	9.740		ug/l	06/20/89	GRAB	08:35 AM
	6.820		ug/l	06/21/89	GRAB	08:45 AM
	5.520		ug/l	06/22/89	GRAB	09:30 AM
	5.520		ug/l	06/23/89	GRAB	08:55 AM
	5.690		ug/l	11/29/88	24 HR COMP	09:00 AM
	7.540		ug/l	11/30/88	24 HR COMP	09:20 AM
	7.230		ug/l	12/01/88	24 HR COMP	09:00 AM
	7.230		ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	6.146					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
DICHLOROBROMOMETHANE	8.100		ug/l	06/21/89	GRAB	08:45 AM
Mean	8.100					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
LEAD	3.800		ug/l	03/07/89	24 HR COMP	08:30 AM
	2.900		ug/l	03/08/89	24 HR COMP	08:30 AM
	3.200		ug/l	03/09/89	24 HR COMP	08:25 AM
	3.200		ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	1.637					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
MERCURY	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.500		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.071					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
NICKEL	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	4.810		mg/l	03/07/89	GRAB	08:30 AM
	2.820		mg/l	03/09/89	GRAB	08:25 AM
	1.140		mg/l	06/20/89	GRAB	08:35 AM
	2.900		mg/l	06/21/89	GRAB	08:45 AM
	4.700		mg/l	06/22/89	GRAB	09:30 AM
Mean	3.274					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
PCB'S	0.000	*	ug/l	04/26/88	GRAB	09:40 AM
Mean	0.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l	02/09/88	24 HR COMP	09:45 AM
	0.000	*	ug/l	02/10/88	24 HR COMP	09:45 AM
	0.000	*	ug/l	02/11/88	24 HR COMP	09:25 AM
	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	0.000	*	ug/l	06/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	06/02/88	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/03/88	24 HR COMP	08:45 AM
	0.000	*	ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.630		ug/l	11/30/88	24 HR COMP	09:20 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.035					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TETRACHLOROETHYLENE;	2.700		ug/l	06/02/88	GRAB	08:45 AM
Mean	2.700					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	0.000	*	mg/l	02/09/88	24 HR COMP	09:45 AM
	0.300		mg/l	02/10/88	24 HR COMP	09:35 AM
	0.000	*	mg/l	02/11/88	24 HR COMP	09:25 AM
	0.390		mg/l	03/07/89	24 HR COMP	08:30 AM
	0.700		mg/l	03/08/89	24 HR COMP	08:30 AM
	0.340		mg/l	03/09/89	24 HR COMP	08:25 AM
	0.330		mg/l	03/10/89	24 HR COMP	09:05 AM
	0.440		mg/l	06/20/89	24 HR COMP	08:35 AM
	0.340		mg/l	06/21/89	24 HR COMP	08:45 AM
	0.480		mg/l	06/22/89	24 HR COMP	09:30 AM
	0.180		mg/l	06/23/89	24 HR COMP	08:55 AM
	0.160		mg/l	11/29/88	24 HR COMP	09:00 AM
	0.170		mg/l	11/30/88	24 HR COMP	09:20 AM
	0.140		mg/l	12/01/88	24 HR COMP	09:00 AM
	0.140		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	0.274					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	24.000		mg/l	02/09/88	24 HR COMP	09:45 AM
	112.000		mg/l	02/10/88	24 HR COMP	09:35 AM
	36.000		mg/l	02/11/88	24 HR COMP	09:25 AM
	58.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	28.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	20.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	22.000		mg/l	03/10/89	24 HR COMP	09:05 AM
	28.000		mg/l	06/01/88	24 HR COMP	09:00 AM
	42.000		mg/l	06/02/88	24 HR COMP	08:45 AM
	38.000		mg/l	06/03/88	24 HR COMP	08:45 AM
	33.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	21.000		mg/l	06/21/89	24 HR COMP	08:45 AM
	22.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	21.000		mg/l	06/23/89	24 HR COMP	08:55 AM
	28.000		mg/l	08/01/88	COMP	09:00 AM
	44.000		mg/l	08/02/88	COMP	09:00 AM
	194.000		mg/l	08/03/88	COMP	09:00 AM
	276.000		mg/l	08/04/88	COMP	09:00 AM
	18.000		mg/l	11/29/88	24 HR COMP	09:00 AM

indicates test results below detection limits

AMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	56.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	48.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	44.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	55.136					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	16.000		mg/l	03/07/89	24 HR COMP	08:30 AM
	10.000		mg/l	03/08/89	24 HR COMP	08:30 AM
	8.000		mg/l	03/09/89	24 HR COMP	08:25 AM
	22.000		mg/l	03/10/89	24 HR COMP	09:05 AM
	14.000		mg/l	06/20/89	24 HR COMP	08:35 AM
	0.000	*	mg/l	06/21/89	24 HR COMP	08:45 AM
	11.000		mg/l	06/22/89	24 HR COMP	09:30 AM
	11.000		mg/l	06/23/89	24 HR COMP	08:55 AM
	10.000		mg/l	08/01/88	COMP	09:00 AM
	38.000		mg/l	08/02/88	COMP	09:00 AM
	58.000		mg/l	08/03/88	COMP	09:00 AM
	76.000		mg/l	08/04/88	COMP	09:00 AM
	10.000		mg/l	11/29/88	24 HR COMP	09:00 AM
	42.000		mg/l	11/30/88	24 HR COMP	09:20 AM
	20.000		mg/l	12/01/88	24 HR COMP	09:00 AM
	14.000		mg/l	12/02/88	24 HR COMP	09:05 AM
Mean	22.500					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
XYLENE	2.000		ug/l	02/09/88	GRAB	09:45 AM
Mean	2.000					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	52.000		ug/l	02/09/88	24 HR COMP	09:45 AM
	48.000		ug/l	02/10/88	24 HR COMP	09:45 AM
	52.000		ug/l	02/11/88	24 HR COMP	09:25 AM
	0.000	*	ug/l	03/07/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/08/89	24 HR COMP	08:30 AM
	0.000	*	ug/l	03/09/89	24 HR COMP	08:25 AM
	0.000	*	ug/l	03/10/89	24 HR COMP	09:05 AM
	35.000		ug/l	06/01/88	24 HR COMP	09:00 AM
	20.000		ug/l	06/02/88	24 HR COMP	08:45 AM
	123.000		ug/l	06/03/88	24 HR COMP	08:45 AM
	32.000		ug/l	06/20/89	24 HR COMP	08:35 AM
	12.000		ug/l	06/21/89	24 HR COMP	08:45 AM
	0.000	*	ug/l	06/22/89	24 HR COMP	09:30 AM
	0.000	*	ug/l	06/23/89	24 HR COMP	08:55 AM
	16.000		ug/l	08/01/88	COMP	09:00 AM
	0.000	*	ug/l	08/02/88	COMP	09:00 AM
	0.000	*	ug/l	08/03/88	COMP	09:00 AM

indicates test results below detection limits

SAMPLING RESULTS FOR PERFORMANCE PAPERS

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
	0.000	*	ug/l	08/04/88	COMP	09:00 AM
	0.000	*	ug/l	11/29/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	11/30/88	24 HR COMP	09:20 AM
	0.000	*	ug/l	12/01/88	24 HR COMP	09:00 AM
	0.000	*	ug/l	12/02/88	24 HR COMP	09:05 AM
Mean	17.727					

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
pH	6.900		S.U.	02/09/88	GRAB	09:45 AM
	6.600		S.U.	02/10/88	GRAB	09:35 AM
	6.600		S.U.	02/11/88	GRAB	09:25 AM
	7.900		S.U.	03/07/89	GRAB	08:30 AM
	7.400		S.U.	03/08/89	GRAB	08:30 AM
	7.300		S.U.	03/09/89	GRAB	08:25 AM
	7.200		S.U.	03/10/89	GRAB	09:05 AM
	7.600		S.U.	06/01/88	GRAB	09:00 AM
	6.900		S.U.	06/02/88	GRAB	08:45 AM
	6.400		S.U.	06/03/88	GRAB	08:45 AM
	7.400		S.U.	06/20/89	GRAB	08:35 AM
	6.700		S.U.	06/21/89	GRAB	08:45 AM
	7.300		S.U.	06/22/89	GRAB	09:30 AM
	10.300		S.U.	06/23/89	GRAB	08:55 AM
	6.500		S.U.	08/02/88	GRAB	09:00 AM
	11.100		S.U.	08/03/88	GRAB	09:00 AM
	12.200		S.U.	08/04/88	GRAB	09:00 AM
	10.600		S.U.	08/05/88	GRAB	08:45 AM
	7.800		S.U.	11/29/88	GRAB	09:00 AM
	6.800		S.U.	11/30/88	GRAB	09:20 AM
	7.100		S.U.	12/01/88	GRAB	09:00 AM
	7.400		S.U.	12/02/88	GRAB	09:05 AM
Mean	7.818					

indicates test results below detection limits

VI. CERTIFICATION:

This aspect of the submittal involves two (2) portions:

1) Qualified Professional Certification; and,

2) Authorized Representative Certification.

Based upon the certification provided (i.e. compliance or noncompliance), submission of a proposed compliance schedule may be necessary. Please review 40 CFR Part 403.12 (b) (6) & (7) plus 403.12 (i) and (k) carefully prior to completing and signing in any designated areas below. Please note that there are strict requirements governing who is a Qualified Professional and Authorized Representative. A copy of the pertinent regulations is attached for reference.

A. Qualified Professional Certification:

1. COMPLIANCE CERTIFICATION

I am personally familiar with the operation(s) performed at the above-referenced facility and with the wastewaters discharged from these operation(s). I hereby certify that the

_____

(write in applicable Pretreatment Standards reference on the line above) are being met on a consistent basis.

_____	_____
Qualified Professional	Representative Firm
_____	_____
Title	Date

previous portion of form completed by John Ward Industrial Waste Technician KWRP 9-21-89

VI. CERTIFICATION (continued):

2. NONCOMPLIANCE CERTIFICATION

I am personally familiar with the operation(s) performed at the above-referenced facility and with the wastewater discharged from these operation(s). I hereby certify that the

_____

(write in applicable Pretreatment Standards reference on the line above) are not being met on a consistent basis. A compliance schedule is enclosed with a compliance date no later than the date specified in the appropriate Pretreatment Standard or upon commencement of discharge to the sanitary sewer.

_____	_____
Qualified Professional	Representative Firm
_____	_____
Title	Date

B. Authorized Representative Certification:

I have reviewed the above-referenced document and accompanying professional certification. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported therein, I believe that the submitted information is true, accurate and complete.

_____
Signature

_____
Title

_____
Date

VII. COMPLIANCE SCHEDULE:

Based upon the reply to the Certification secion above, please complete the proposed compliance schedule detailed below as required. Please note that no more that nine (9) months can elapse between dates within the proposed compliance schedule and that written updates must be submitted to the Control Authority within fourteen (14) days of each date in the compliance schedule.

PROPOSED COMPLIANCE SCHEDULE

Compliance Task	Date of Completion
Process flow and source data verification	_____
Selection of alternatives and, if necessary, pretreatment studies and enginneering design submitted to Control Authority	_____
Construction and, or, implementation of selected alternatives, if necessary.	_____
Complete Construction and, or, implementation of selected alternatives, if necessary.	_____
Final Compliance Date	_____

ATTACHMENT 11

CITY OF KALAMAZOO
RECORDS RETENTION SCHEDULE
Public Utilities/Water Reclamation

Retention Code	Records Series	Retention Period	Remarks
UR 7	Correspondence	7 years	
	Daily Operation Report	7 years	
	Daily Plant Flow Chart	7 years	
	Industrial Surveillance Report	7 years	
	Reclamation Plant Maintenance Record	7 years	
	Daily Laboratory Operation Report	7 years	
	Daily Pumping Station Report	7 years	
UR 10	Laboratory Report	10 years	
	Bacteriology	10 years	
UR 92	Construction Bulletin	Life of Equipment	
	Equipment Manual	Life of Equipment	
UR 99	Monthly State Report	Permanent	
	Precipitation Record	Permanent	
	Plant Record Drawing	Permanent	
	Health Department Permit	Permanent	

Phone'd to Truchan 10/23/90 @ 5:00pm.

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

October 23, 1990

TO: James Truchan, Division Chief, ERD

FROM: Galen Kilmer, Plainwell District Supervisor, ERD

SUBJECT: Speareflex Corporation, Kalamazoo

Speareflex Corporation has been out of business and the facility abandoned since January 1989.

Kalamazoo Public Safety Department officials contacted Plainwell District staff of a transformer oil spill at the facility on 10/22/90 at approximately 12:30pm. ERD and SWQD staff responded at approximately 1:30pm.

Staff confirmed that three large transformers outside the facility had been opened and one had been drained on the ground. Four additional large transformers inside a power building at the site had been open and drained on the ground. Apparently the transformers had been vandalized for copper salvaging. Consumer Power staff provided field analyses indicating the presence of PCBs in the oil.

Staff assessment indicated that transformer oil was on the concrete and in a catch basin outside of the building. Catch basin discharge was suspected of going to the storm sewer and the Kalamazoo River. Spilled transformer oil inside the building was pooled on the dirt floor. Examination of the power building roof found leaks.

ERD staff contacted the USEPA office at Grosse Isle for assistance. USEPA staff indicated probable difficulty in obtaining response funding due to the federal budget situation. Due to the imminent threat to the Kalamazoo River, ERD staff contacted and received approval from James Truchan to hire an emergency removal contractor to address the imminent hazard. District requested bids from four cleanup contractors via telephone. Site was secured and access limited by the evening of 10/22/90.

Two contractors responded with bids on the morning of 10/23/90. K&D Industrial was chosen as the low-bid contractor. NOAA weather reports indicated rain imminent for the evening of 10/23/90. Accordingly, district staff told K&D Industrial to mobilize by 3:00pm.

Numerous telephone calls confirmed that the property was still owned by Speareflex Corporation. Although Speareflex has not filed for bankruptcy, its sole assets are apparently the abandoned building and property. Immediate cleanup of transformer oil spill was requested of the corporation president, but he refused due to lack of resources. Permission for MDNR to access the property for emergency removal was granted by the corporation president. An access permission form was drafted and approved by the Environmental Protection Division, Department of Attorney General.

Currently at 5:00pm on 10/23/90, District ERD and SWQD staff are overseeing contractor cleanup activities at the site. Final cleanup options beyond emergency removal are currently being evaluated with USEPA.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

District 12 Headquarters
P.O. Box 355, Plainwell, Michigan 49080

November 20, 1990

TO: Jim Oakwood, Special Services Section, Environmental Response Division

FROM: Mark DuCharme, Plainwell District, Environmental Response Division MDD

SUBJECT: Speareflex Clean Water Emergency Funds

Kalamazoo Department of Public Safety (KDPS) officials contacted Plainwell District staff of a transformer oil spill at the Speareflex Corporation on October 22, 1990, at approximately 12:30 p.m. Greg Danneffel, Surface Water Quality Division, and Mark DuCharme, Environmental Response Division, responded to the complaint at approximately 1:30 p.m.

Staff confirmed that three (3) large transformers (64 gallons each) outside the facility had been opened and one had been drained on the ground. Four (4) additional large transformers inside a power building at the site had been opened and drained on the ground. One (1) additional small transformer inside the power building was still intact. Apparently, the transformers had been vandalized for copper salvaging. Consumers Power Company staff provided field analyses indicating the presence of PCBs in the oil.

Staff determined the transformer oil from the outside transformers had drained into a catch basin. The discharge point of the catch basin was unknown, however, it was suspected to lead into a storm sewer and ultimately to the Kalamazoo River. Open access exists to the spill area, as a result of the lock being removed from the fence, and numerous open entry areas throughout the building.

The transformers inside the power building were situated over a pea gravel floor. District staff speculated that the oil which had drained from the power building transformers had percolated through the pea gravel into the subsurface soils. Examination of the power building roof showed leaks.

Environmental Response staff contacted the USEPA office at Grosse Isle for assistance. The USEPA staff indicated probable difficulty in obtaining response funding due to the federal budget situation. Due to the imminent threat to the Kalamazoo River, Environmental Response staff contacted and received approval from James Truchan to hire an emergency removal contractor to address the immediate and imminent health hazards. Our office requested bids from four (4) cleanup contractors via telephone. Contractors were hesitant to provide bids without visual inspection of the situation.

Three (3) contractors eventually provided bids (telephone quotation form enclosed). K & D, Industries West, Inc. was determined to be the low bid contractor and could respond the quickest (written bid sheet enclosed). As a result, K & D was selected as the contractor.

District staff were in close contact with the National Oceanic and Atmospheric Administration (NOAA) weather station in Grand Rapids. The NOAA weather forecast included rain for the evening of October 23, 1990. Therefore, staff decided immediate mobilization would be necessary to eliminate the imminent threat to the Kalamazoo River. The site was secured, and access limited by the evening of October 22, 1990.

Numerous telephone calls confirmed that the property was owned by the Speareflex Corporation. Speareflex has been out of business and the facility abandoned since January 1989. Although Speareflex has not filed for bankruptcy, its' sole assets are apparently the abandoned building and property. Immediate cleanup of the transformer oil spill was requested of the corporation president, but he refused due to the lack of monetary resources. Permission for the Michigan Department of Natural Resources to access the property for emergency removal was granted by the corporation president. An access permission form was drafted and approved by the Environmental Protection Division, Department of Attorney General.

Remedial activities included pumping the remaining oil from the transformers and containerizing in drums, pumping the oil out of the catch basin, placing a plug rug over the catch basin, placing the transformer carcasses in the power building, securing the doors leading to the power building, placing PCB labels on the power building doors, placing a tarp over the roof of the power building, decontaminating the concrete where the oil spilled, and securing the fence to restrict access to the spill area.

District staff notified KDPS officials that additional transformers were discovered to have been vandalized on the roof of the building. One (1) transformer had been dumped out on the roof, one (1) had been opened but not dumped out, and three (3) more were still secured. An additional two (2) dry transformers were secure.

To save on mobilization and demobilization costs, District staff requested K & D to provide a bid to cleanup the spill on the roof and eliminate the immediate and imminent health hazard that was present. K & D provided a written bid (copy enclosed) and was given authorization to proceed immediately, before the next rain event took place.

Remedial activities included pumping the remaining oil from the transformers and containerizing in drums, decontaminating the roof, and securing the empty transformer carcasses.

A total of 1420 gallons of transformer oil and water and 841 pounds of transformer oil contaminated solid waste was containerized and transported for disposal by Recovery Specialists, Inc., a subcontractor for K & D. The waste was manifested under the emergency ID number MIE200000438.

District staff made several observations indicating the abandoned facility may be serving as a shelter area for the homeless. Consequently, District staff contacted the City of Kalamazoo's Dangerous Buildings Coordinator regarding access restrictions to prevent exposure of unauthorized entrants to hazardous materials. The City is working to restrict access to the abandoned facility.

District staff has also initiated contact with the USEPA regarding emergency removal activities. EPA's technical assistance team is scheduled to perform a site assessment at the facility on Tuesday, November 13, 1990, and indications are that EPA will perform additional removal activities at the site.

The emergency removal work to eliminate the immediate and imminent health hazards associated with the spill of transformer oil has been completed. Enclosed is a field requisition and a copy of the invoice for the work completed. We will need a Department Purchase Order so we can approve the invoice for payment.

MDD/cjf

Enclosure

Burglary causes spill of PCB-contaminated oil

Kalamazoo Gazette 10/23/90

SUSAN ELLIOTT
GAZETTE SPECIAL WRITER

Kalamazoo Department of Public Safety officers were trying to track the spread of about 500 gallons of PCB-contaminated mineral oil that was spilled during a burglary Saturday at the vacant Speareflex Corp. building, 241 E. Kalamazoo.

Thieves made off with copper tubing connected to several electrical transformers, sending tainted oil across the floor.

Preliminary tests show that the oil contains low levels of polychlorinated biphenyls, or PCBs, suspected cancer-causing substances, said Lt. Robert Dievendorf.

About 456 gallons of oil drained from four inside transformers, and another 64 gallons drained from two outside transformers that were broken open to remove copper tubing, police said.

Police were informed of a break-in there Saturday by Consumers Power Co. When officers went to the scene Monday morning, they found the damage to the transformers, Dievendorf said.

Meanwhile, officials from the Kalamazoo Department of Public Utilities and the Michigan Department of Natural Resources are checking area drains for the presence of the contaminated oil. None has been found, Dievendorf said.

Peter Guria
FAX 312-353-9176

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: July 11, 1995

SUBJECT: ON-SCENE COORDINATOR'S REPORT - Removal Action at the Speareflex Site, 241 E. Kalamazoo Ave. Kalamazoo, Michigan (Site ID # LH)

FROM: Rick Karl, Chief
Emergency and Enforcement Response Branch, HSE-5J

TO: John Riley, Acting Director
Emergency Response Division

THRU: William Muno, Associate Director for Superfund, HS-6J

Attached please find the On-Scene Coordinator's Report for the removal action conducted at the Speareflex site located in Kalamazoo, Kalamazoo County, Michigan. The report follows the format outlined in the National Contingency Plan (NCP), Section 300.165. This removal began on May 3, 1993, and was completed on April 26, 1994. The On-Scene Coordinator (OSC) for this removal action was Pete Guria.

The site posed an immediate threat to human health and the environment. The action was taken to mitigate threats posed by flammable liquids, flammable solids, oxidizing liquids, and additional hazardous wastes that were located throughout the building in drums and small containers. Some of the drums and containers were in poor condition and deteriorating rapidly. Oil containing polychlorinated biphenyls (PCBs) was also found in several electrical transformers and capacitors.

Costs under the control of the On-Scene Coordinator totaled $ 385,486.29, of which $ 282,820.65 were for the Emergency Response Cleanup Services (ERCS) contractor.

Any indication in this OSC Report of specific costs incurred at the site is only an approximation, subject to audit and final definitization by U.S. EPA. The OSC Report is not a final reconciliation of the costs associated with a particular site.

Portions of the OSC Report appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

This site is not on the National Priorities List (NPL).

Attachment

cc: Alan Howard,
Michigan Department of Natural Resources, w/ OSC Report
T. Johnson, U.S EPA, OERR, OS-210, w/OSC Report

bcc: T. Nash, 5CS-TUB-3, w/OSC Report
T. Lesser, 5PA-14, w/OSC Report
O. Warnsley, CRU, 5HS-TUB-7, w/OSC Report
K. Westlake, R-19, w/OSC Report
T. Connell, 5SPT
R. Mayhugh, HSC-9J, w/OSC Report
B. Ramsey, Secretary, NRT, OS-120
P. Guria, HSE-5J, w/OSC Report
R. Karl, HSE-5J, w/OSC Report
W. Messenger, HSE-5J, ESS, w/OSC Report
Acting Chief, EERB, RS-1, HSE-GI, w/OSC Report
D. Bruce (RS2), HSE-5J, w/OSC Report
EERB Site File, HSE-5J, w/OSC Report (5)

ON-SCENE COORDINATOR'S REPORT

CERCLA REMOVAL ACTION

Speareflex Site

Kalamazoo, Michigan

SITE ID # LH

DELIVERY ORDER NO. 5001-05-329

Removal Dates: May 3, 1993 - April 26, 1994

Emergency and Enforcement Response Branch
Office of Superfund
Waste Management Division
Region V
United States Environmental Protection Agency

EXECUTIVE SUMMARY

Site/Location: Speareflex Site
241 East Kalamazoo Avenue
Kalamazoo, Kalamazoo County, Michigan

Removal Dates: May 3, 1993 - April 26, 1994

INCIDENT DESCRIPTION:

The Speareflex site consists of a multi-story building where push/pull control cables were manufactured for the automotive industry during the 1980s. The site is located at 241 East Kalamazoo Avenue in downtown Kalamazoo, Kalamazoo County, Michigan. The area surrounding the site is primarily commercial and residential. The site is bordered on the south by East Kalamazoo Avenue. North Edwards and North Pitcher Streets border the site on the west and east, respectively. Michigan Central Railroad tracks border the site to the north.

On October 22, 1990, the Kalamazoo Police Department reported that vandals had entered the Speareflex facility and released approximately 526 gallons of PCB-contaminated oil from on-site electrical transformers. The Michigan Department of Natural Resources (MDNR) responded to the incident and, using field test kits, verified that oil containing PCB concentrations greater than 50 parts per million (ppm) had been released on the roof and in the storage area of the transformers. Some of the oil also entered a transformer storage area catch basin leading to the City of Kalamazoo storm sewer system.

On October 23, 1990, K & D Industrial Services of Romulus, Michigan, was contracted by MDNR to pump and dispose of all transformer oil and decontaminate the affected spill areas. MDNR performed a detailed inspection of the facility during the cleanup of the transformer spill and observed drums in various locations throughout the facility. Labels present on some of the drums indicated the contents to be flammable solvents, isocyanide, and other chlorinated compounds.

The removal action was taken to mitigate the threats to public health posed by the presence of drums and a small container comprised of PCBs, flammable liquid, flammable solids, oxidizers, and other hazardous waste on-site.

ACTIONS TAKEN:

The U.S. EPA began a removal action on May 3, 1993, and performed the following emergency removal activities: development of a safety and support zones; daily air sampling for asbestos and lead particles; daily air monitoring for volatile organic compounds, hydrogen cyanide, and oxygen; drum and container staging and sampling; sampling of transformers and capacitors; removal of hazardous wastes from floor trenches and pits; removal and decontamination of basement floor contamination; waste stream compatibility and bulk testing analysis; drum liquid and solid material bulking; decontamination of drums and small containers; decontamination of transformers; decontamination of the walls, floors, and equipment; and disposal of all waste streams.

Approximately 7,678 gallons of hazardous liquids (acids, bases, flammable, PCBs, cyanide-bearing, etc.) were transported off-site for treatment. Approximately 7,988 pounds of hazardous waste solids (PCBs solids, flammable solids, oxidizers, etc.) were shipped off-site for disposal. All actions taken were consistent with the National Contingency Plan (NCP).

The removal was completed on April 26, 1994, at an estimated cost under control of the OSC of $385,486.29, of which $282,820.65 was for the Emergency Response Cleanup Services (ERCS) contractor. The On-Scene Coordinator was Pete Guria.

Pete Guria

Pete Guria, On-Scene Coordinator
Emergency and Enforcement Response Branch
United States Environmental Protection Agency
Region V

11 July 1995
Date

TABLE OF CONTENTS

Section	Page
EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	iii
LIST OF FIGURES	v
LIST OF TABLES	vi
LIST OF ATTACHMENTS	vii
OSC REPORT STANDARD APPENDICES LIST	viii
1.0 SUMMARY OF EVENTS	1
1.1 Location/Initial Situation	1
1.2 Previous Actions/Site History	5
1.3 Threat to Public Health and the Environment	7
1.3.1 Natural Resource Damage	8
1.4 Attempts to Obtain a Response by Potentially Responsible Parties	8
1.5 Chronological Narrative of Response Actions Taken	8
1.5.1 Safety and Support Facilities	8
1.5.2 Air Sampling and Monitoring	9
1.5.3 Staging of Drums and Small Containers	9
1.5.4 Sampling of Transformers and Capacitors	9
1.5.5 Sampling and Hazard Categorization of Drums, Small Containers, and Tanks	10
1.5.6 Cleaning of Trenches and Sumps	10
1.5.7 Removal of Basement Floor Solids	11
1.5.8 Waste Stream Compatibility and Composite Sampling	11
1.5.9 Bulking of Drum Liquid and Solid Material	11
1.5.10 Special Waste Streams	12
1.5.11 Decontamination of Drums and Small Containers	12
1.5.12 Decontamination of Transformers	12
1.5.13 Initial Decontamination of Walls, Floors, and Equipment	12
1.5.14 Floor Sampling of the Southwest Trench Area	13
1.5.15 Scarification and Stabilization of Southwest Trench Area	13
1.5.16 Disposal of Waste Streams	13
1.5.17 Standard Waste Tables	17
1.6 Community Relations	20
1.7 Cost Summary	20

2.0 EFFECTIVENESS OF REMOVAL ACTIONS.....22

2.1 The Potentially Responsible Parties.....22
2.2 State and Local Agency.....22
2.3 Federal Agencies and Special Teams.....22
2.4 Contractors, Private Groups, and Volunteers.....22

3.0 DIFFICULTIES ENCOUNTERED.....22

4.0 RECOMMENDATIONS.....22

LIST OF FIGURES

Figures		Page
1	SITE LOCATION MAP	2
2	SITE DESCRIPTION MAP	3
3	BASEMENT AREA MAP	4
4	CHIP SAMPLE LOCATION AND RESULT MAP	14
5a	CORE SAMPLE RESULTS FOR CHROMIUM	15
5b	CORE SAMPLE RESULTS FOR REACTIVE CYANIDE	16

LIST OF TABLES

Tables		Page
1	WASTE DISPOSAL SUMMARY	18
2	SUMMARY OF TOTAL ESTIMATED REMOVAL COSTS	21

LIST OF ATTACHMENTS

Attachment		Page
1	TIME LINE OF REMOVAL ACTIVITIES	23

Emergency and Enforcement Response Branch
Office of Superfund, U.S. EPA, Region V

OSC REPORT STANDARD APPENDICES LIST *

Site Name: Speareflex Site
Site ID#: LH Delivery Order #: 5001-05-329

1. ID#	OPERATIONAL FILES
1-A	Action Memos/Additional Funding Requests/Time Exemptions
1-B	POLREPS
1-C	Site Entry/Exit Log
1-D	Hot Zone Entry/Exit Log
1-E	Site Safety Plan
1-F	Site Log(s)
1-G	Community Relations Plan
1-H	Daily Work Orders
1-I	Daily Work Reports
1-J	Site Monitoring Logs (Air, etc.)
1-K	Site Maps
1-L	Site Contacts/Business Cards
1-M	General Correspondence/Information
1-N	Newspaper Articles
1-O	Site Photos/Videos
1-P	Security Guard Reports
1-Q	Notice of Letter & 104 (e) Information Requests
1-R	Background Information

* Portions of these OSC Report Appendices may contain confidential business information or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

* Note that certain files for this site are maintained elsewhere by EERB; these appendices are those files maintained by the OSC during the removal action.

OSC REPORT STANDARD APPENDICES LIST (CONT'D)

ID#	2. FINANCIAL FILES
2-A	Delivery Orders/Procurement Requests Modifications to contract (ERCS)
2-B	Technical Directive Documents/Modifications (TAT)
2-C	Daily Cost Reporting U.S. EPA Form 1900-55's
2-D	Daily Cost Summaries/ERCS Invoices
2-E	Cost Estimates/RCMS
2-F	Incident Obligation Log/U.S. EPA Cost
2-G	Field Purchases Receipt Log
2-H	Await Bill Tracking Log
2-I	Equipment Logs
2-J	Subcontractor Bid Sheets
2-K	TAT Cost Documentation
2-L	CERCLA Cost Documentation Forms
2-M	Contractors Invoice

	3. TECHNICAL FILES
3-A	TAT Site Assessment/Emergency Action Plans/Other Reports (List)
3-B	Title Search Information
3-C	Administrative Record
3-D-1	Hazcat Results
3-D-2	Analytical Bids
3-D-3	Analytical Results/QA/QC
3-D-4	Analytical Air Sample Results
3-D-5	Analytical PCB Results
3-E	Manifests
3-F-1	Waste Disposal Summary
3-F-2	Transporter Ticket
3-F-3	Transformer Form
3-G	Drum Logs/VAT Logs
3-H	Compatibility Results
3-I	Chains of Custody
3-J	ATSDR Risk Assessment Information
3-K	Waste Profile Sheets
3-L	Natural Resource Damage Documentation
3-M	Product MSDS
3-N	Waste Stream Analytical Results
3-O	Disposal Quotes & Facility Approval Letters

1.0 SUMMARY OF EVENTS

1.1 Location/Initial Situation

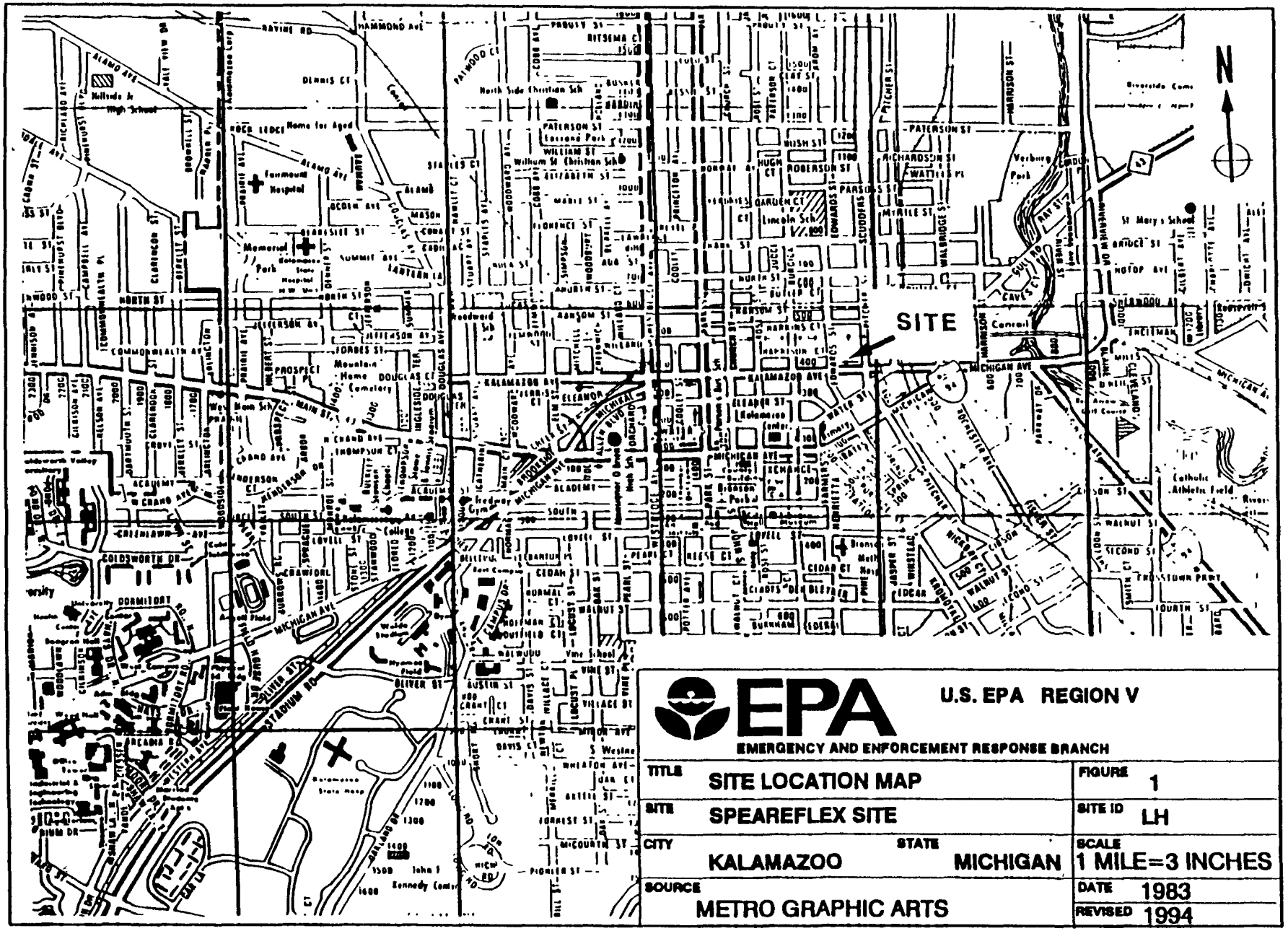
The Speareflex site consists of a three and four story building where push-pull control cables were manufactured for the automotive industry during the 1980s. The site is located at 241 East Kalamazoo Avenue in downtown Kalamazoo, Kalamazoo County, Michigan. The area surrounding the site is primarily commercial and residential. The site is bordered on the south by East Kalamazoo Avenue. North Edwards and North Pitcher Streets border the site on the west and east, respectively. Michigan Central Railroad tracks border the site to the north (see Figure 1 for site location). Private residences are located approximately 1/2 mile to the north. The northern boundary of the site is concealed from the main streets surrounding the building, keeping visibility in this area to a minimum.

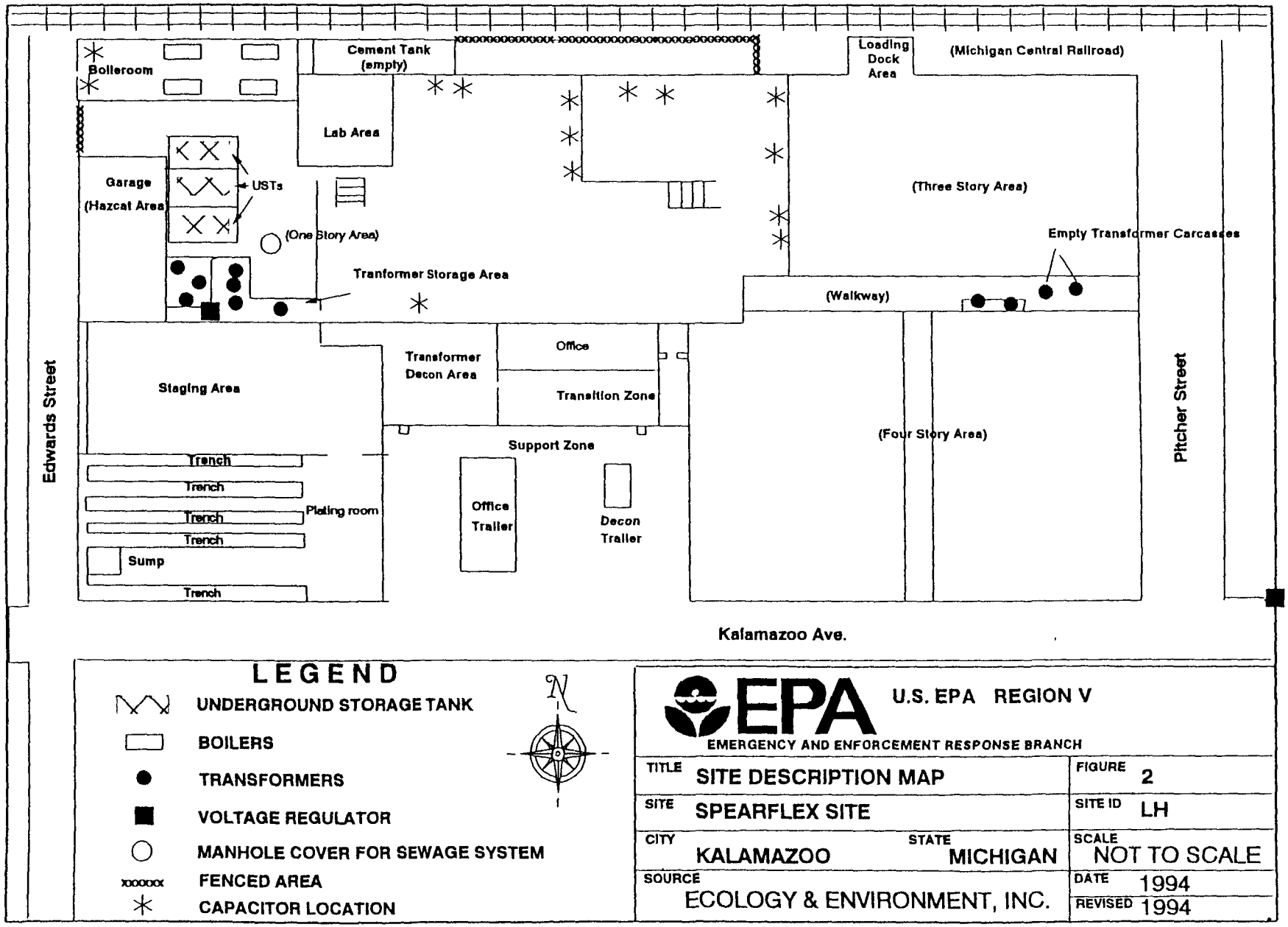
The three- and four-story facility was reportedly constructed in the year 1900 and consists of several interconnected buildings which occupy most of one city block (Figures 2 and 3). The central portion of the facility was a one-story area that was mainly used for office space. An assembly area was located north of the office space. The initial four-story building, located at the southeast corner of the block, contained a paint mixing room on the southwest section of the first floor. The remaining floors and buildings appeared to be utilized for assembly and testing.

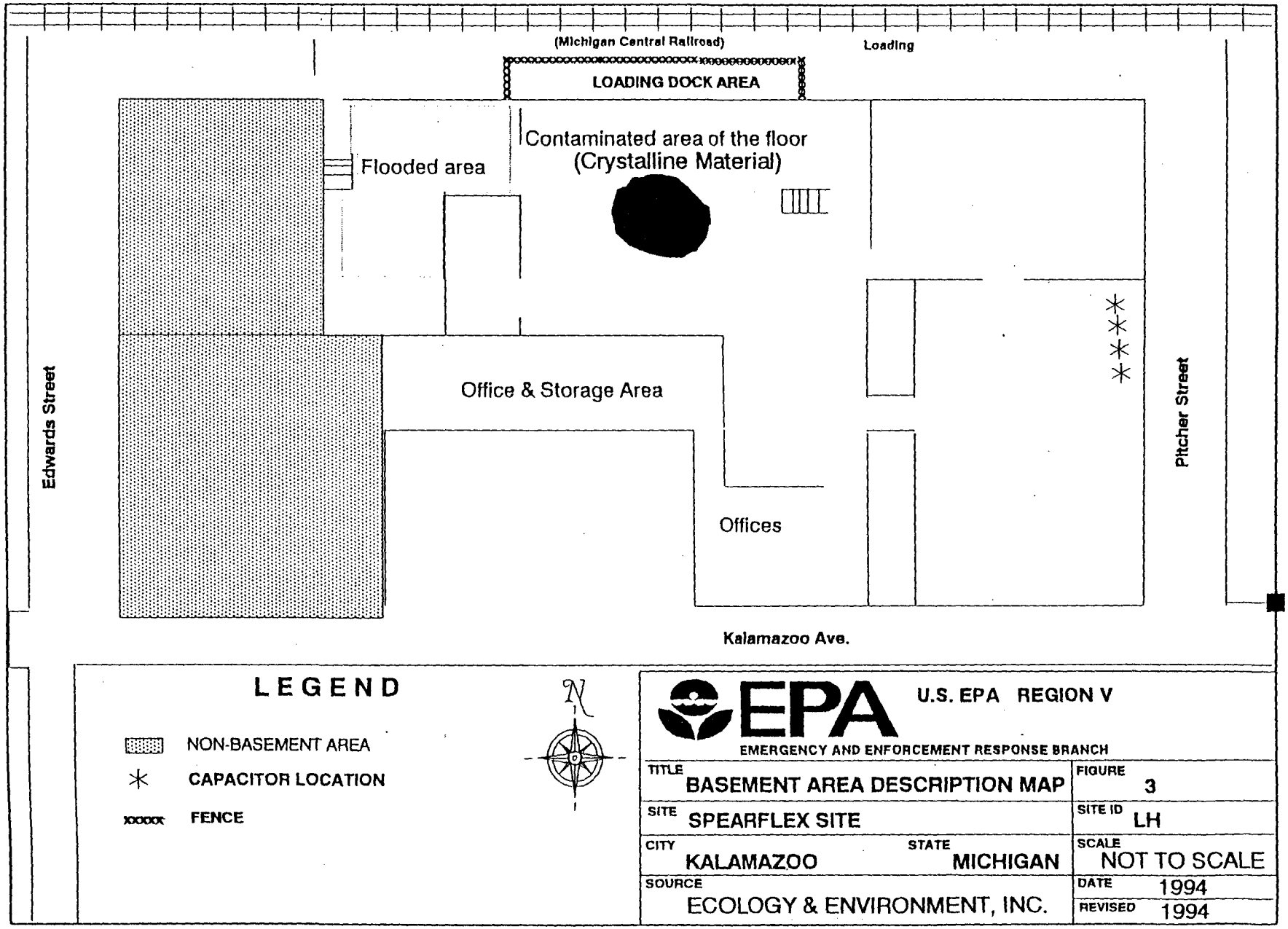
In an U.S. EPA site assessment conducted in November of 1990, storage areas east and northeast of the office area were noted to contain drums and small containers. A drum marked trichloroethylene (TCE) was found on the first floor near the loading dock. A boiler room on the ground floor of the northwest section of the facility contained uncovered drums believed to contain oil in a room south of the boiler room, six transformer carcasses were observed. Empty transformers were also found above two fire escapes on the north side of the building, as well as on a roof walkway between two wings of the three and four story building (see Figure 2). Several 55-gallon drums and small containers (1- to 15-gallon) were found throughout the southeast building.

A fenced storage area near the garage was reportedly the location of a spill of polychlorinated biphenyl (PCB) oil caused by vandals. The Michigan Department of Natural Resources (MDNR) contracted K and D Industrial Enterprises of Kalamazoo, Michigan, to perform an emergency removal of the spilled PCB oil in October 1990. Three underground storage tanks were located between the transformer area and the boiler room (see Figure 3). The tanks were used to store diesel fuel for the boiler room. At the time of the site assessment, the tanks were approximately 1/3 full of viscous oily material.

During the site assessment standing water was observed in the northwest section of the basement of the facility. Approximately twenty-two 55-gallon drums, some of them empty, were observed in this area. The labels on these drums included "RotoFinish", non-hazardous waste oil; "Ebonite" based cutting oil, "Mobil Oil"; and "Diamond Oil" mineral spirits.


SITE
N
EPA
U.S. EPA REGION V
EMERGENCY AND ENFORCEMENT RESPONSE BRANCH
TITLE
SITE LOCATION MAP
FIGURE
1
SITE
SPEAREFLEX SITE
SITE ID
LH
CITY
KALAMAZOO
STATE
MICHIGAN
SCALE
1 MILE=3 INCHES
SOURCE
METRO GRAPHIC ARTS
DATE
1983
REVISED
1994


Boilerroom
Cement Tank (empty)
Loading Dock Area
(Michigan Central Railroad)
Lab Area
Garage (Hazcat Area)
USTs
(One Story Area)
(Three Story Area)
Empty Transformer Carcasses
Tranformer Storage Area
(Walkway)
Edwards Street
Staging Area
Transformer Decon Area
Office
Transition Zone
Support Zone
(Four Story Area)
Pitcher Street
Trench
Trench
Trench
Trench
Plating room
Sump
Trench
Office Trailer
Decon Trailer
Kalamazoo Ave.
LEGEND
UNDERGROUND STORAGE TANK
BOILERS
TRANSFORMERS
VOLTAGE REGULATOR
MANHOLE COVER FOR SEWAGE SYSTEM
FENCED AREA
CAPACITOR LOCATION
N
EPA
U.S. EPA REGION V
EMERGENCY AND ENFORCEMENT RESPONSE BRANCH
TITLE SITE DESCRIPTION MAP
FIGURE 2
SITE SPEARFLEX SITE
SITE ID LH
CITY KALAMAZOO
STATE MICHIGAN
SCALE NOT TO SCALE
SOURCE ECOLOGY & ENVIRONMENT, INC.
DATE 1994
REVISED 1994


(Michigan Central Railroad)
Loading
LOADING DOCK AREA
Contaminated area of the floor
(Crystalline Material)
Flooded area
Office & Storage Area
Offices
Edwards Street
Pitcher Street
Kalamazoo Ave.
LEGEND
NON-BASEMENT AREA
CAPACITOR LOCATION
FENCE
N
EPA
U.S. EPA REGION V
EMERGENCY AND ENFORCEMENT RESPONSE BRANCH
TITLE BASEMENT AREA DESCRIPTION MAP
FIGURE 3
SITE SPEARFLEX SITE
SITE ID LH
CITY KALAMAZOO
STATE MICHIGAN
SCALE NOT TO SCALE
SOURCE ECOLOGY & ENVIRONMENT, INC.
DATE 1994
REVISED 1994

Additional small containers (5- to 20-gallon) were also found in the basement of the facility. These containers had labels indicating the contents as fluoronic-L-2H, sodium hypochlorite, and various silicate material.

Two large manufacturing areas were located to the west and southwest of the office area. Several 55-gallon drums, one labeled as containing isocyanide, and small containers were scattered throughout these areas. In the manufacturing area west of the office, a trench ran parallel to Edwards Street along the west side of the facility. The southwest section of the facility also had several trenches throughout the area. These trenches had possibly been used during plating activities.

The facility was in fair to poor condition. At several locations throughout the building, the roof or the ceiling was leaking, and water was accumulating in the basement. The windows on the south, west, and east section were intact. A majority of the windows on the north section were broken. Wire fencing was present only in the northwest corner of the facility. Doors to the building were locked and secure on the south, west, and east section. Two doors located on north section of the site were open, one on the first floor, and the other in the basement. The building contained pieces of old clothing, indicating that the building may have been occupied by vagrants.

1.2 Previous Actions/Site History

The Speareflex site was initially developed by the Shakespeare Company which owned the property from October 1915 to December 1981. Site operations during this time included the manufacturing of fishing equipment, recreational products, and automotive controls. The Shakespeare Company sold the facility to the Speareflex Corporation in December 1981. Speareflex operated the facility from January 1, 1982, until January 31, 1989, producing push-pull control cables for the automotive industry. It was reported that Speareflex purchased, received, stored, and disposed of materials used for production of those controls. Vapor de-greasing operations were suspected to have been used during the manufacturing process.

In December of 1987, FTS Consulting, Inc. (FTS), began conducting an environmental study of the area surrounding the Speareflex facility for revitalization of the downtown Kalamazoo area. Soil boring and groundwater samples were collected to help determine the environmental conditions of the property for purchase and development. Results of the study revealed elevated concentrations of trichloroethane (TCE) in groundwater beneath the Speareflex property.

During July 1988, Speareflex hired Cole Associates (Cole) to conduct a hydrogeological investigation and confirm the FTS findings. Analytical results of groundwater samples collected on Speareflex property confirmed the presence of TCE and other chlorinated hydrocarbons. The Cole report, dated October 1989, concluded that the source of groundwater contamination may have been from degreasing activities that had taken place during the facility's operations.

On September 23, 1988, the MDNR requested that Speareflex prepare and submit a work plan for additional investigative activities by October 21, 1988. Speareflex responded that it did not have the resources available to address the environmental problems at the site.

On October 22, 1990, the Kalamazoo Police Department reported that vandals had entered the Speareflex facility and released approximately 526 gallons of PCB-contaminated oil from electrical transformers on site. MDNR responded to the incident and, using field test kits, verified that oil containing PCB concentrations greater than 50 parts per million (ppm) had been released on the roof and in the storage area of the transformers. Some of the oil entered a transformer storage area catch basin leading to the City of Kalamazoo storm sewer system.

On October 23, 1990, K & D Industrial Services of Kalamazoo, Michigan, was contracted by MDNR to pump and dispose of all transformer oil and decontaminate the affected spill areas. MDNR performed a detailed inspection of the facility during the cleanup of the transformer spill and observed drums in various locations throughout the facility. Labels present on some of the drums indicated flammable solvents, isocyanide, and other chlorinated compounds.

MDNR received analytical results from oil samples collected by Consumers Power Company following the release. The November 1, 1991, Laboratory Commercial Services report revealed that PCB levels detected in the samples ranged between 3 and 220 ppm from the transformer oil, oil/water mixture, and associated debris collected and disposed of by K & D Industrial Services.

On October 29, 1990, MDNR requested the assistance of the United States Environmental Protection Agency (U.S. EPA) Region V Emergency and Enforcement Response Branch (EERB), Section I, Grosse Ile, Michigan, to investigate threats posed by the presence of drums and PCB oil at the site.

On November 13, 1990, the U.S. EPA Technical Assistance Team (TAT) conducted a site assessment of the Speareflex facility. Approximately 100 drums of solvents, oil, and unknown materials were found on-site. Labels on some of the drums indicated the presence of flammable solvents such as toluene, methyl ethyl ketone (MEK), xylene, methylene chloride, TCE, and other organics. Eleven transformers were observed in two areas of the facility and appeared to have their dielectric fluids removed.

Analytical results of solid, liquid, and wipe samples collected by the TAT from the drums, transformers, and soil revealed the presence of chlorinated and organic solvents and PCBs. An attempt was made to restrict access to the site by boarding up the first-floor windows and doors, and padlocking the rear and west gates. However, there was evidence that the building was being used by vagrants, suggesting that unauthorized entry had occurred.

1.3 Threat to Public Health and/or the Environment

Conditions at the Speareflex site posed an imminent and substantial endangerment to public health and the environment based upon factors set forth in the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) Actual or potential exposure by nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants.

This threat was present at the Speareflex site due to the presence of high concentrations of methyl ethyl ketone (MEK), toluene, xylene, and ethyl benzene contained in drums and small containers found on-site. Analytical results of samples collected from the on-site electrical transformer and capacitors had indicated the presence of PCBs at concentrations above the U.S. EPA action level of 50 ppm. The transformers had been vandalized on several occasions, resulting in oil releases to the surrounding areas. Access to the site was not completely restricted, and evidence was observed of vandalism and vagrants living in the building. The potential for exposure via direct contact was high due to the apparent use of the building by vagrants.

b) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

This factor was present at the Speareflex site due to the existence of drums containing MEK, toluene, xylene, ethyl benzene, and fuel oil. Many of the drums had open tops or bungs and could easily have been tipped over by vandals, releasing their contents. During drum sampling and consolidation, air monitoring was conducted in the breathing zone next to the drums. These results indicated elevated levels of over 100 ppm of volatile compounds. Electrical transformers and capacitors found on site were confirmed to contain dielectric fluids containing PCBs. Analytical results indicated 2.0 to 5.1 ppm of PCB-1260 in the transformers and 770,000 to 860,000 ppm of PCB-1242 oil in the capacitors.

c) Threat of fire and explosion;

This factor was present at the Speareflex site due to the existence of drums containing flammable solvents such as MEK, ethylbenzene, toluene, and xylene. These chemicals have flash points ranging from 21 to 81 degrees Fahrenheit, and MEK had been observed in a small room on site with no ventilation, creating the potential for an explosive atmosphere in that area. Vandalism or increased temperature during the summer months could have provided an ignition source, resulting in a large fire.

1.3.1 Natural Resource Damage

Because the facility was located in an urban area, damage to natural resources was not assessed and no formal study was conducted by either the U.S. Department of the Interior or the MDNR. However, water run-off from all areas of the plant was considered to present an environmental hazard. A particular area of concern, according to the Kalamazoo Public Health Department, was the plating room at the southwest corner of the building. Runoff from the on-site storm sewers could potentially enter the nearby Arcadia Creek.

1.4 Attempts to Obtain a Response by Potentially Responsible Parties

The Speareflex property was at one time, owned by Chicago Rawhide (CR) Industries, Inc., of Valparaiso, Indiana, which acquired the property from the Shakespeare Company on December 30, 1981. Information request letters were sent to Ronald V. Emanoil, President, Speareflex Corporation; Charles O. Finley, Secretary, Speareflex Corporation; and Robert P. Ganger, Vice President, Glassmaster Control. A follow-up letter was sent to Mr. Emanoil to ascertain the relationship between CR Industries and Speareflex Corporation, and to obtain additional information concerning those parties responsible for the operation of the site. The information given to U.S. EPA indicated that the Speareflex Corporation was part of CR Industries. General Notice Letter of Potential Liability Letters were issued to all past and present owners of the site. It was determined that there were no viable parties to order a cleanup under CERCLA.

1.5 Chronological Narrative of Response Actions Taken

1.5.1 Safety and Support Facilities

On April 27, 1993, a pre-planning meeting was held at the site with the U.S. EPA On-Scene Coordinator (OSC) Pete Guria; Technical Assistance Team Member (TATM) Ron Bugg; and representatives of the Emergency Response Cleanup Services (ERCS) contractor, Riedel Environmental Services (RES), including Response Manager Harry Beckler, and a field clerk to discuss cleanup activities and strategies. The necessary cleanup activities included: collecting and staging over 300 drums and small containers from throughout the building; sampling, decontaminating, and dismantling 8 to 10 transformers; and sampling and bulked drum material. The field clerk was authorized by the OSC to remain in Kalamazoo through the weekend to coordinate utility hookups and procure supplies and equipment.

On May 3, 1993, the RES crew, along with OSC Guria and TATMs Ron Bugg and Lisa Graczyk, mobilized to the site. The ERCS crew conducted a general walk-through of the facility and began to set up the support, transition, and exclusion zones. During the walkthrough, it was noted that the facility contained a small amount of asbestos pipe insulation and an extremely large amount of peeling paint throughout the buildings.

Work and transition zones were delineated and completed by May 5, 1993. By May 12, 1993, the Speareflex site contained a mobile office, an equipment trailer, a decontamination trailer, electricity, and water on-site.

1.5.2 Air Sampling and Monitoring

Beginning on May 3, 1993, the OSC requested that the TAT collect daily air samples in the building for asbestos fibers and lead particulates because of the asbestos pipe insulation and the peeling paint throughout the facility. The air samples were sent to Delisle Laboratory, Kalamazoo, Michigan, for analysis. TATMs also conducted daily air monitoring beginning on May 3, 1993, using an organic vapor analyzer (OVA), explosimeter, and hydrogen cyanide (HCn) monitox throughout the building.

Air sampling for asbestos fibers and lead particulates was suspended on May 10, 1993, because analytical results from a total of twelve asbestos and eight lead air samples, collected through May 8, had indicated levels at or below ambient air requirements for asbestos (0.05 fibers/cc) and lead (0.05 mg/m^3). Delisle Laboratory used National Institute for Occupational Safety and Health (NIOSH) analytical method 7400 for fibers/cubic centimeters and NIOSH analytical method 7082 for lead particulates.

1.5.3 Staging Drums and Small Containers

After the non-hazardous debris in the southwest section of the facility was moved and the area cleared, a staging area was constructed on May 5, 1993. The RES crew began collecting drums and containers throughout the building and placing them in the staging area. As the drums were staged, RES crew members collected samples from the drums and containers for hazard categorization (see Section 1.5.5).

A total of 125 55-gallon drums and 281 containers (5 gallons or less in capacity) were staged. Of these, 70 drums and 234 containers were found to contain liquid and solid material.

1.5.4 Sampling of Transformers and Capacitors

On May 7, 1993, the TAT and the RES chemist began to collect transformer oil samples from five of the seven transformers that were located in the storage area near the garage on the west section of the property (see Figure 2). Two other transformers, located on the fire escape of the southeast building, were also sampled. The samples were shipped to Canton Analytical Laboratory (CAL) in Plymouth, Michigan, for PCB analysis. The results of these samples indicated that the level of PCBs from the transformers located in the storage area was less than 5.1 ppm. The remaining transformers located on the fire escape of the southeast building contained PCBs at less than 2.0 ppm. RES transferred the material inside the transformers to drums.

RES subcontracted the use of a 7-ton mobile crane to remove seven transformers and a large circuit breaker from the storage area and place them on the drum and container staging area on May 14, 1993. Because the floor of the storage area was part gravel and part soil, a composite sample was collected to determine if any PCBs had been released to the area. The sample was sent to CAL for analysis and the results indicated levels of PCBs below 0.330 ppm. Sample TS-8 was collected from a voltage regulator in the transformer storage area.

The results of the TS-8 sample indicated 15 ppm of the PCB Arochlor-1260.

Small electrical capacitors were identified and removed from various locations throughout the facility. The capacitors were also placed on the drum and container staging area. The TAT contacted the manufacturers of the capacitors, Westinghouse and General Electric, to assist in identifying PCB concentrations.

The TAT was informed that "innerteen" is a trade name for PCB oil manufactured by Westinghouse, and "Pyranol" is a trade name for PCB oil manufactured by General Electric. Information regarding levels of PCB in these oil were not available. Samples of the capacitor oils were sent to CAL for analysis. Analytical results indicated that the capacitors contained 77% to 86% PCB-1242 oil.

During the week of May 17, 1993, through May 23, 1993, the soil and gravel from the transformer storage area were placed into 11 drums and then staged. The TAT conducted ENSYS tests on the soil and gravel for PCBs. The test indicated that the levels of PCBs in the gravel and soil were below 10 ppm for PCBs.

1.5.5 Sampling and Hazard Categorization of Drums, Small Containers, and Tanks

On May 7, 1993, the RES crew began to sample the staged drums and containers for hazard categorization (hazcatting). Hazcatting analytical procedures were developed by the TAT, ERCS, and U.S. EPA. Hazcatting is comprised of a series of simple field chemistry tests designed to identify the hazardous characteristics of an unknown chemical, mixture, or waste. A series of qualitative test-tube tests permits the unknown material to be classified into on of the following nine categories; Acid (liquid/solid), acid oxidizer (liquid/solid), base oxidizer (liquid/solid), flammable (liquid/solid), chlorinated hydrocarbons, cyanide (liquid/solid), sulfide (liquid/solid), and non-hazardous (liquid/solid).

On May 5, 1993 ERCS chemist and TAT began hazcatting the samples collected from the trenches and the basement floors. On May 7, 1993, the ERCS chemist and TAT began Hazcatting samples collected from the staged drums and containers. Hazcatting results were used to develop appropriate waste streams for the disposal of the contents of the drums and containers (see Section 1.5.8).

Three underground storage tanks (USTs) were located on-site next to the garage (see Figure 2). The three UST were sampled on May 17, 1993, and analyzed by CAL. The analytical results indicated that the material contain in the USTs was fuel oil number 6.

1.5.6 Cleaning of Floor Trenches and Sumps

Several narrow trenches and a shallow sump were discovered in a room south of the drum and container staging area, which is located at the southwest corner of the site.

The RES crew removed the non-hazardous material from the southwest storage area in order to begin the removal of the solid material inside the trenches and shallow sump.

The shallow sump was approximately eight feet deep and contained approximately one cubic yard of solid material. To access the sump, a crew member was connected to a tripod and lowered into the shallow sump in level B protection with continuous ventilation. Continuous air monitoring was performed during the removal of the material. The material was placed in a 10-gallon bucket and lifted to the surface by hand.

The material from the trenches and the shallow sump was drummed and staged. The drums were sampled and hazcatted. The hazcat results indicated levels of 10 ppm for cyanide and chromium, and over 250 ppm for zinc. Compatibility tests were performed on the material from the basement, trenches, and the sump. The materials were consolidated, bulked, and classified as hazardous solid waste for disposal.

1.5.7 Removal of Basement Floor Solids

During the initial walk-though of the site, an area of crystallized material approximately 10 feet in circumference was noted in the basement (see Figure 4). TATM Bugg collected a sample of the crystallized material and hazcatted the sample material on May 14, 1993. The hazcat results indicted that the crystallized material contained 10 ppm of cyanide, 10 ppm of chromium, and over 250 ppm of zinc. The RES crew removed the material from the floor and placed the material into drums. The ERCS crew consolidated the material from the trenches and sump with the basement floor solids.

1.5.8 Waste Stream Compatibility and Composite Sampling

Hazcatting and compatibility testing activities were completed on May 20, 1993. Hazcatting was performed on-site to categorize the waste streams for disposal. The compatibility tests performed by the RES chemist identified eleven waste groups and composite samples were prepared for each group. When preparing composite samples, the RES chemist determined the representative volume of waste per drum or container in each waste stream. All waste stream composites were shipped to CAL for disposal characterization analysis.

During the week of June 7 through June 13, 1993, a majority of the waste group composite analytical results from CAL were sent to the OSC. The TAT and ERCS collected a sample of the decontamination water and sent the sample to Canton Analytical Laboratory for analysis. The TAT and ERCS packaged composite waste stream samples, along with their characterization forms, for delivery to the appropriate disposal facilities. The TAT hand-delivered samples to Clean Harbors in Chicago, Illinois, and PCI in East Chicago, Indiana. Additional samples were sent by federal express to the remaining disposal facilities (see Appendix 3K).

1.5.9 Drum Liquid and Solid Material Bulking

Consolidation of compatible waste streams was performed to minimize the number of containers to reduce disposal costs.
On May 27, 1993, the RES chemist and the TAT assisted the crew in consolidating the contents of drum waste streams in level B protection.
The TAT performed air monitoring for potential releases during this activity.
During the week of May 24, 1993, through May 30, 1993, the ERCS crew completed consolidation of the contents of the staged drums and small containers into the proper shipping containers for transport to disposal facilities.

K & D Industrial Services delivered two roll-off boxes for consolidation of several compatible waste groups. The groups of organic solids; base/neutral solids; floor debris from the basement, the trenches and sump area; and, soil/gravel waste from the transformer storage area were consolidated into a 20-cubic-yard roll-off box. The drums were decontaminated and crushed. The decontamination water was stored in the poly tank until disposal was arranged. The drums were placed in the second roll-off box for disposal.

1.5.10 Special Waste Streams

During the collection of on-site drums, two drums suspected of containing pure product were found. The first drum, marked "Depress 100", was a produced by Diversy Corporation, Wyandotte, Michigan. The label on this drum indicated that Depress 100 contained petroleum wax, cottonseed fatty acid, isopropanol amide soap, motor oil and methyl cellulose. The drum of Depress 100 was sent for disposal as waste stream No.13.

The second drum, marked "Peel Filmite" was manufactured by DuBois Chemical in Cincinnati, Ohio. The material is a non-silicone foam control agent. According to the label, the product contained toluene, dichloromethane, and vinyl resin. The Peel Filmite was sent as waste stream 10.

These two special waste streams were sent to Clean Harbors, Braintree, Massachusetts, for disposal. Refer to Table 1 for a summary of all waste disposal activities.

1.5.11 Decontamination of Drums and Small Containers

The crew decontaminated 82 drums using a steam jenny. The empty and decontaminated drums were then crushed on June 2, 1993, and placed in a non-hazardous roll-off box. RES subcontracted the drum crushing to Midwest Environmental Consultants of Michigan Inc., located in Monroe, Michigan. The liquid used to decontaminate the drums was stored in a poly tank until characterization and disposal could be arranged.

1.5.12 Decontamination of Transformers

The internal windings of the transformers were removed, decontaminated, and placed on pallets on May 26, 1993. The decontaminated transformer windings were left on-site. The transformer carcasses were then emptied of the decontaminated oil and partially dismantled by cutting out the sides or the

bottoms. The dismantled empty carcasses were left on-site

1.5.13 Initial Decontamination of Walls, Floors, and Equipment

On May 27, 1993, the ERCS crew decontaminated the floors, trenches, sump, portions of the suspected plating room walls, and a portion of the basement with sodium hypochlorite to neutralize any cyanide residue that was present on the floor. Wipe samples of a 10 cm by 10 cm area were collected and the results indicated levels 0.012 mg/sample of cyanide and 0.24 mg/sample of chromium on the basement floor. The trenches, sump, and basement were retreated with hypochlorite. A steam jenny was used to pressure wash the trenches, sump, staging area, the equipment in the hot zone, and basement. The decontamination water from decontaminating the equipment, was placed in the poly tank.

On July 2, 1993, 4 chip samples were collected from the floor and trench area of the suspected plating room by TAT and the ERCS foreman. ERCS informed the OSC of the results of the chip samples in October 1993. The results indicated that there was reactive cyanide levels as high as 660 ppm and a total cyanide level of 2,200 ppm.

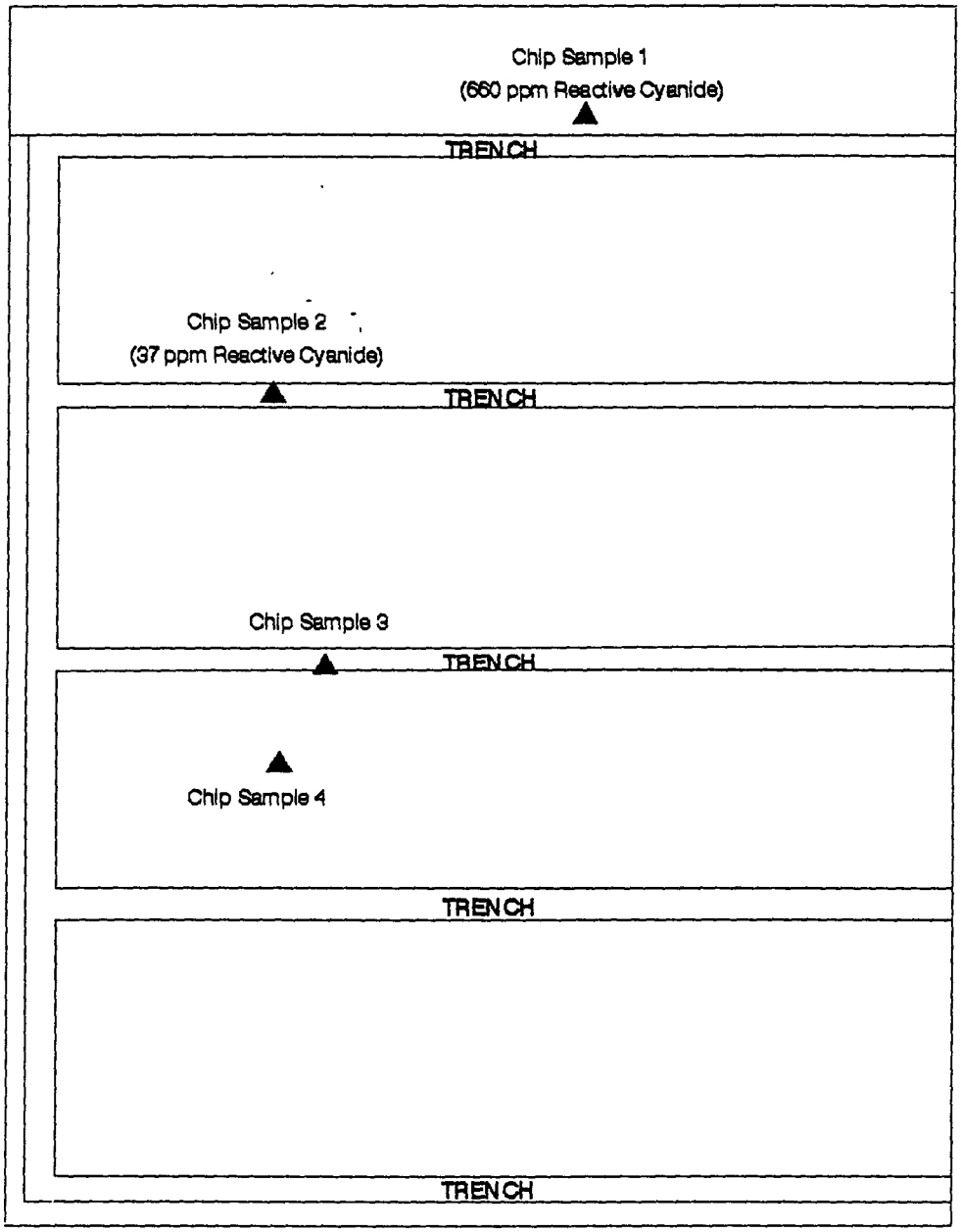
1.5.14 Floor Sampling of the Southwest Trench Area

Analytical results of the concrete floor chip samples indicated 2,200 ppm total and 660 ppm reactive cyanide present in the first chip sample which was collected from the north trench in the suspected plating room. The second chip sample was collected form the second trench and had 600 ppm total and 37 ppm reactive cyanide (see figure 4). The OSC requested TAT to develop a sampling plan which included a sampling grid of the plating room.

On February 7 through 9, 1994, ERCS collected 38 core samples, 0" to 3" deep, from the floor and trenches of the suspected plating area (Figure 5a and 5b). The samples were shipped to Wadsworth-Alert Laboratory in North Canton, Ohio to be analyzed for total and reactive cyanide, total and reactive sulfides, and priority pollutant metals.

1.5.15 Scarification and Stabilization of the Southwest Trench Area

During the period of March 22 through 24, 1994 ERCS began scarification to remove cyanide and chromium contaminated concrete from the suspected plating room floor. Scarification was conducted on an 150 square foot area at a depth of 1/8 inch. The concrete dust created during the scarification process was collected utilizing a high power vacuum and transferred into a 55-gallon drum. The scarification area was sealed by two layers of an epoxy paint. The PPE and disposable equipment generated during the scarification process was placed into a second drum. The concrete dust and PPE drums were disposed at Michigan Disposal, Belleville, Michigan, on April 26, 1994.



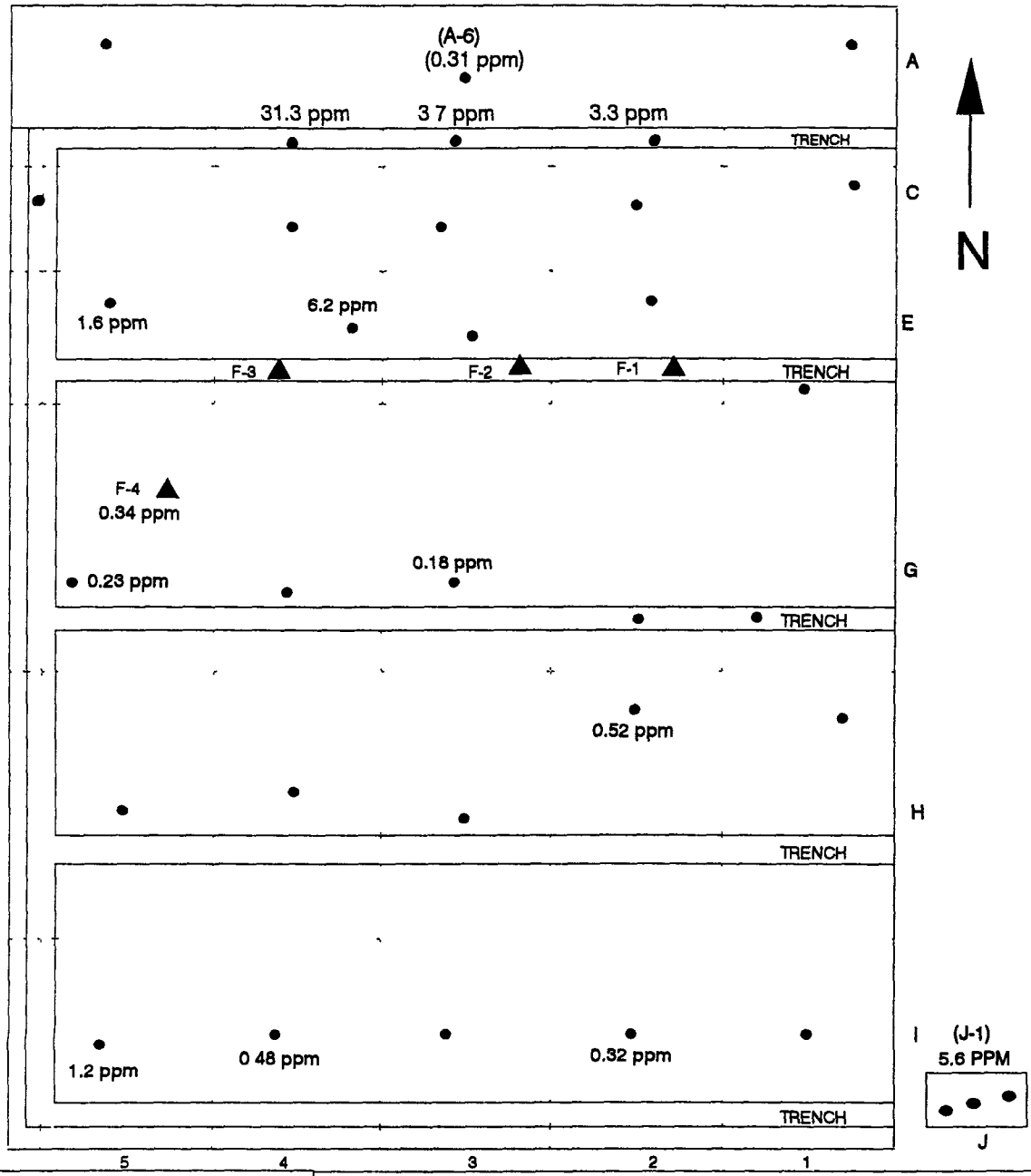
LEGEND

▲ CHIP SAMPLES COLLECTED ON 7/2/94

U.S. EPA REGION V

EMERGENCY AND ENFORCEMENT RESPONSE BRANCH

TITLE CHIP SAMPLE LOCATION – PLATING AREA	FIGURE 4
SITE SPEAREFLEX SITE	SITE ID LH
CITY KALAMAZOO STATE MICHIGAN	SCALE NOT TO SCALE
SOURCE ECOLOGY & ENVIRONMENT, INC.	DATE 1994



LEGEND

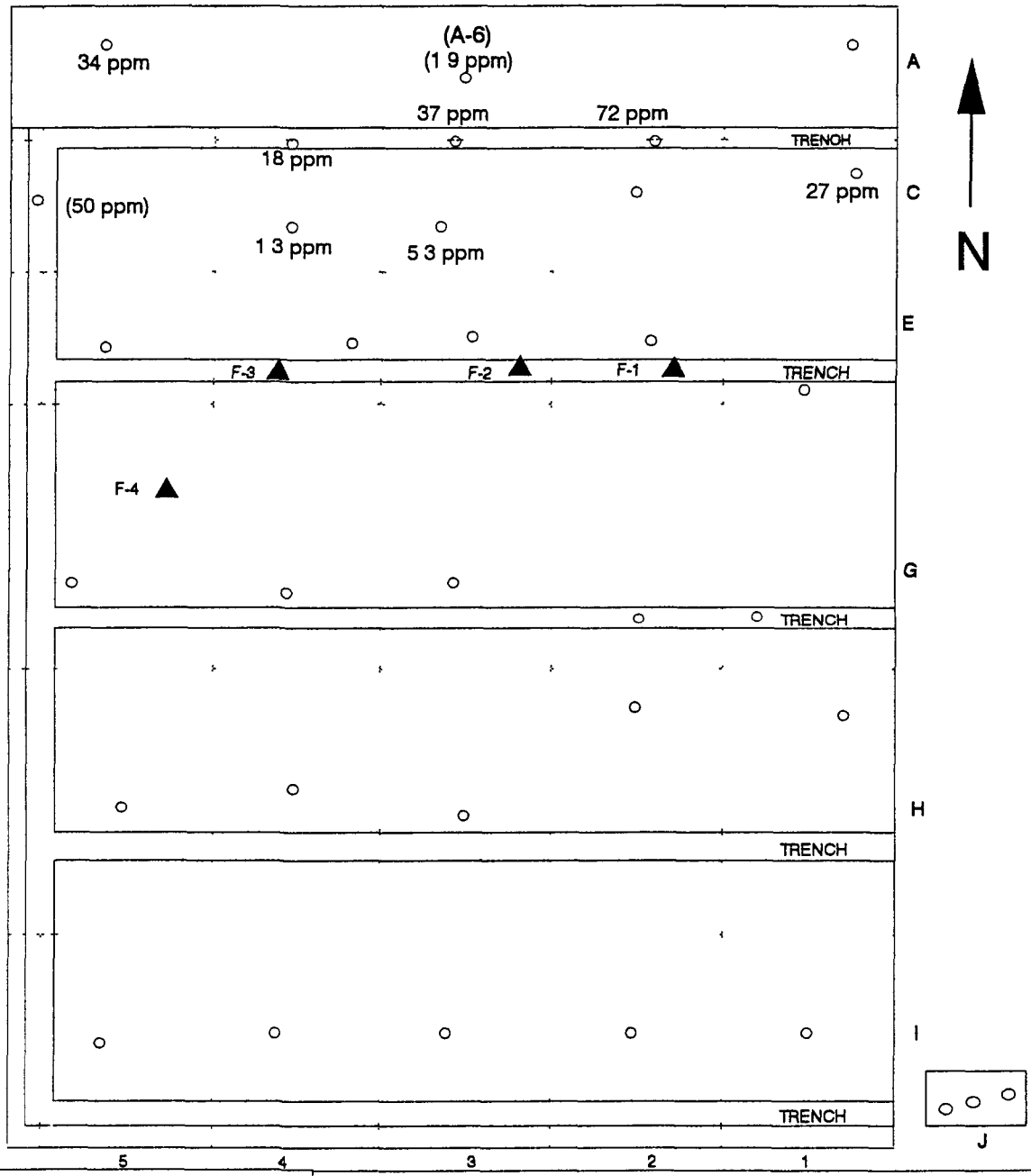
- ● CORE SAMPLING
- ▲ CORE SAMPLES F-1 THRU F-4
- J BACKGROUND SAMPLES

ALL SAMPLES ARE 3 TO 4 INCHES DEEP

U.S. EPA REGION V

EMERGENCY AND ENFORCEMENT RESPONSE BRANCH

TITLE: TRENCH SAMPLING GRID AND RESULTS FOR TCLP CHROMIUM	FIGURE: 5a
SITE: SPEAREFLEX SITE	SITE ID: LH
CITY: KALAMAZOO STATE: MICHIGAN	SCALE: NOT TO SCALE
SOURCE: ECOLOGY & ENVIRONMENT, INC.	DATE: 1994



LEGEND

○ CORE SAMPLING

▲ CORE SAMPLES F-1 THRU F-4

J - BACKGROUND SAMPLES

ALL SAMPLES ARE 3 TO 4 INCHES DEEP

U.S. EPA REGION V

EMERGENCY AND ENFORCEMENT RESPONSE BRANCH

TITLE TRENCH SAMPLING GRID AND RESULTS FOR TOTAL CYANIDE	FIGURE # 5b
SITE SPEAREFLEX SITE	SITE ID LH
CITY KALAMAZOO STATE MICHIGAN	SCALE NOT TO SCALE
SOURCE ECOLOGY & ENVIRONMENT, INC.	DATE 1994

1.5.16 Disposal of Waste Streams

The non-hazardous debris, the decontaminated of Resource Conservation and Recovery Act (RCRA)-empty drums, and personal protective equipment (PPE) were loaded into three 12-cubic-yard non-hazardous roll-off boxes and shipped to Waste Management's Westside Recycling and Disposal facility at Three Rivers, Michigan, for disposal.

Between July 26, 1993 and July 30, 1993, the RES crew, TATm Graczyk and OSC Guria mobilized to the site to conduct disposal activities. On July 26, 200 gallons of waste paint, contained in five 55-gallon drums, were sent to Clark Processing, Dayton, Ohio, for fuels blending.

The 2,500 gallons of decontamination liquid stored in the poly tank was shipped for treatment and disposal to Drug and Laboratory in Plainwell, Michigan, on July 26, 1993. Twenty pounds of aerosol paint cans were also sent to Drug and Laboratory for disposal.

On July 27, 1993, the PCB contaminated liquids, solids, electrical capacitors, and oil were shipped to Aptus, Inc., Coffeyville, Kansas for incineration. Two 55-gallon drums of oxidizing solids were shipped to Laidlaw, in Greenbrier, Tennessee, for treatment and disposal.

The flammable solids waste stream and non-regulated liquids were shipped to Clean Harbors in Chicago, Illinois, for treatment and disposal on July 28, 1993. The hazardous waste liquids and the flammable liquid from waste stream No.2 also were shipped to Clean Harbors on July 28, 1993.

On July 28, 1993, 12 cubic yards of consolidated hazardous solid material and 8 cubic yards of contaminated crushed drums were sent to Envirosafe of Ohio, Oregon, Ohio, for treatment and disposal. On July 30, 1993, the ERCS crew, the TAT, and the OSC temporarily demobilized from the site.

Concrete dust, ppe, and other contaminated debris generated during the scarification and sealing process were placed into 2 55-gallon drums and shipped to Michigan Disposal, Belleville, MI, on April 26, 1994, for treatment and disposal.

1.5.17 Standard Waste Table

During the week of July 19 through July 25, 1993, all of the waste streams were accepted by the disposal facilities to which they were profiled (see Table 1). The ERCS Transportation and Disposal Coordinator finalized subcontracts for shipment and disposal of the wastes streams on July 23, 1993. Wastes generated during February and March 1994, activities were accepted for disposal in April 1994. The standard waste table provides a summary of all waste removed from the Speareflex site, including waste category, quantity, and date shipped, disposal method, and location of the disposal facility.

TABLE 1
WASTE DISPOSAL SUMMARY
SPEAREFLEX SITE

Waste Category	Quantity	Date Shipped	Manifest Number	Disposal Method	Facility / Location
Base Neutral Liquid N.O.S. 9, NA3082	2,500 gal	7/26/93	MI3209613	Fuels Blending	Drug & Laboratory Disposal, Inc. Plainwell, MI
Paint Waste Flammable Liquids UN1263	200 gal	7/26/93	MI2800318	Incineration	Drug & Laboratory Disposal, Inc. Plainwell, MI
Oxidizing Solids N.O.S. 5.1, UN1979	800 lbs	7/27/93	MI3193086	Deactivation	Laidlaw Greenbrier, TN
Flammable Liquids N.O.S. 3, UN1993	55 gal	7/28/93	MA G132626	Fuels Blending	Clean Harbors Braintree, MA
PCB Liquids N.O.S. 9 (PCB,D018) NA3082	5,398 gal	7/27/93	MI3000335	Incineration	Aptus, Inc. Coffeyville, KS
PCB Solids N.O.S. 9 (D008,PCB) NA3082	158 kg	7/27/93	MI3000335	Incineration	Aptus, Inc. Coffeyville, KS
PCB Solids NA 9,188	1,414 lbs	7/27/93	MI3000336	Incineration	Aptus, Inc. Coffeyville, KS
PCB Liquids NA 9288	116 lbs	7/27/93	MI3000336	Incineration	Aptus, Inc. Coffeyville, KS
Basic Liquid N.O.S. 9, NA3082	100 gal	7/28/93	MA G132626	Incineration	Clean Harbors Braintree, MA

TABLE 1
WASTE DISPOSAL SUMMARY
SPEAREFLEX SITE

Waste Category	Quantity	Date Shipped	Manifest Number	Disposal Method	Facility / Location
Flammable Solids N.O.S. 4.1, UN1325	40 gal	7/28/93	IL4810462	Fuels Blending	Clean Harbors Chicago, IL
Waste Flammable Liquid N.O.S. 3, UN1993 (U06323)	55 gal	7/28/93	IL4810462	Fuels Blending	Clean Harbors Chicago, IL
Grease Non-D.O.T. regulated	275 gal	7/28/93	IL4810462	Landfill	Clean Harbors Chicago, IL
Silicone Foam Agent Non-D.O.T. regulated ("Depress 100")	55 gal	7/28/93	IL4810462	Landfill	Clean Harbors Chicago, IL
Waste Aerosols N.O.S. 2.1, UN1950	20 lbs	7/26/93	MI3209590	Deactivation	Drug & Lab Disposal, Inc. Plainwell, MI
Hazardous Waste Solids ORM 9189	12 cu.yd	7/29/93	MI2800319	Landfill	Envirosafe of Ohio Oregon, OH
Non-Hazardous Debris	12 cu.yd	6/3/93	N.R.	Landfill	Waste Management Westside Recycling Three Rivers, MI

TABLE 1
WASTE DISPOSAL SUMMARY
SPEAREFLEX SITE

Waste Category	Quantity	Date Shipped	Manifest Number	Disposal Method	Facility / Location
Non-Hazardous Debris	12 cu.yd	6/4/93	N.R.	Landfill	Waste Management Westside Recycling Three Rivers, MI
PPE/Non-Hazardous Debris	12 cu.yd	6/7/93	N.R.	Landfill	Waste Management Westside Recycling Three Rivers, MI
Non-Hazardous, Non-Reg. material, (RCRA empty crushed drums and glass)	8 cu.yd	7/30/93	MI2800320	Landfill	Envirosafe of Ohio Oregon, OH
Hazardous Waste Solid (Cadmium, Drums of scarified concrete and PPE)	310 lbs	4/26/94	MI3700855	Treatment Landfill	MI Disposal Belleville, MI

Key:
cu. yd = cubic yards
gal = gallons
lbs = pounds
N.R. = not required
kg = kilograms

1.6 Community Relations

The public, in general, was not overly concerned with the Speareflex site. The OSC maintained frequent communication with Marty Myers of the Kalamazoo Fire Department, Calvin Jones of the city of Kalamazoo Engineer's Office, and Joe Monski of the city water and sewer department, updating them on daily activities. Although a formal community relations plan was not implemented at the site, standard community concerns were obtained and can be found in Appendix 1-G, Standard Community Relations Plan.

1.7 Cost Summary

A cost summary for the removal action at the Speareflex site is presented in Table 2. Costs under the control of the OSC totalled $385,486.29, of which $282,820.65 were for the ERCS contractor.

These cost are estimated, subject to audit and final definitization by U.S. EPA. The OSC report is not intended to be a final reconciliation of all costs associated with a particular site.

TABLE 2
SUMMARY OF TOTAL ESTIMATED REMOVAL COSTS
Speareflex Site

May 3, 1993 - July 30, 1993

EXTRAMURAL COSTS:		
ERCS Contractor[1]		$ 282,820.65
Labor/Travel/Subsistence		$ 144,378.50
Equipment		$ 6,689.33
Material		$ 17,331.32
Sampling/Analysis		$ 48,701.24
Disposal		$ 25,768.67
Subcontractors		$ 39,951.59
	Subtotal	$ 282,820.65
TAT Contractor[2]		$ 70,405.64
	Subtotal	$ 353,227.29
INTRAMURAL COSTS[3]		
U.S. EPA - Direct Costs		$ 12,490.00
Indirect Costs		$ 19,769.00
	Subtotal	$ 32,259.00
ESTIMATED TOTAL PROJECT COSTS		$ 385,486.29
PROJECT CEILING		$ 450,300.00

(1) Source:ERCS Contractor Riedel Environmental Services Invoice #8129-12 from 06/01/94 (Appendix 2-M).

(2) Source:TDD# T05-9304-025B Regional Operational Review Information System (RORIS) from 06/11/94

(3) Source:Incident Obligation Log (IOL), Appendix 2-F

Any indication of specific costs incurred at the site is only an approximation, subject to audit and final definitization by the U.S. EPA. The OSC Report is not meant to be a final reconciliation of the costs associated with a particular site.

2.0 EFFECTIVENESS OF REMOVAL ACTIONS

2.1 The Potentially Responsible Parties

No Action was undertaken by the PRPs. See Section 1.4 for more information pertaining to the attempts to obtain a PRP action.

2.2 State and Local Agencies

MDNR previously conducted an emergency response to the release of transformer oil at the site. The agency then referred the situation to U.S. EPA. Representatives of MDNR and the Kalamazoo Fire Department conducted site visits during removal activities and were also updated regularly on site status via pollution reports.

2.3 Federal Agencies and Special Teams

Peter Guria of the U.S. EPA Region V served as the federal On-Scene Coordinator for this project. The OSC closely coordinated with other federal, state and local agencies. The OSC also directed daily activities of ERCS and TAT personnel on-site.

2.4 Contractors, Private Groups, and Volunteers

Ecology and Environment, Inc. (E & E), provided TAT members from its Chicago, Illinois, office for technical support, sampling, air monitoring, photographic and contractor safety and activity documentation. Riedel Environmental Services (RES) provided members of their ERCS team to perform site clean-up activities (see Attachment 1 for the time-line).

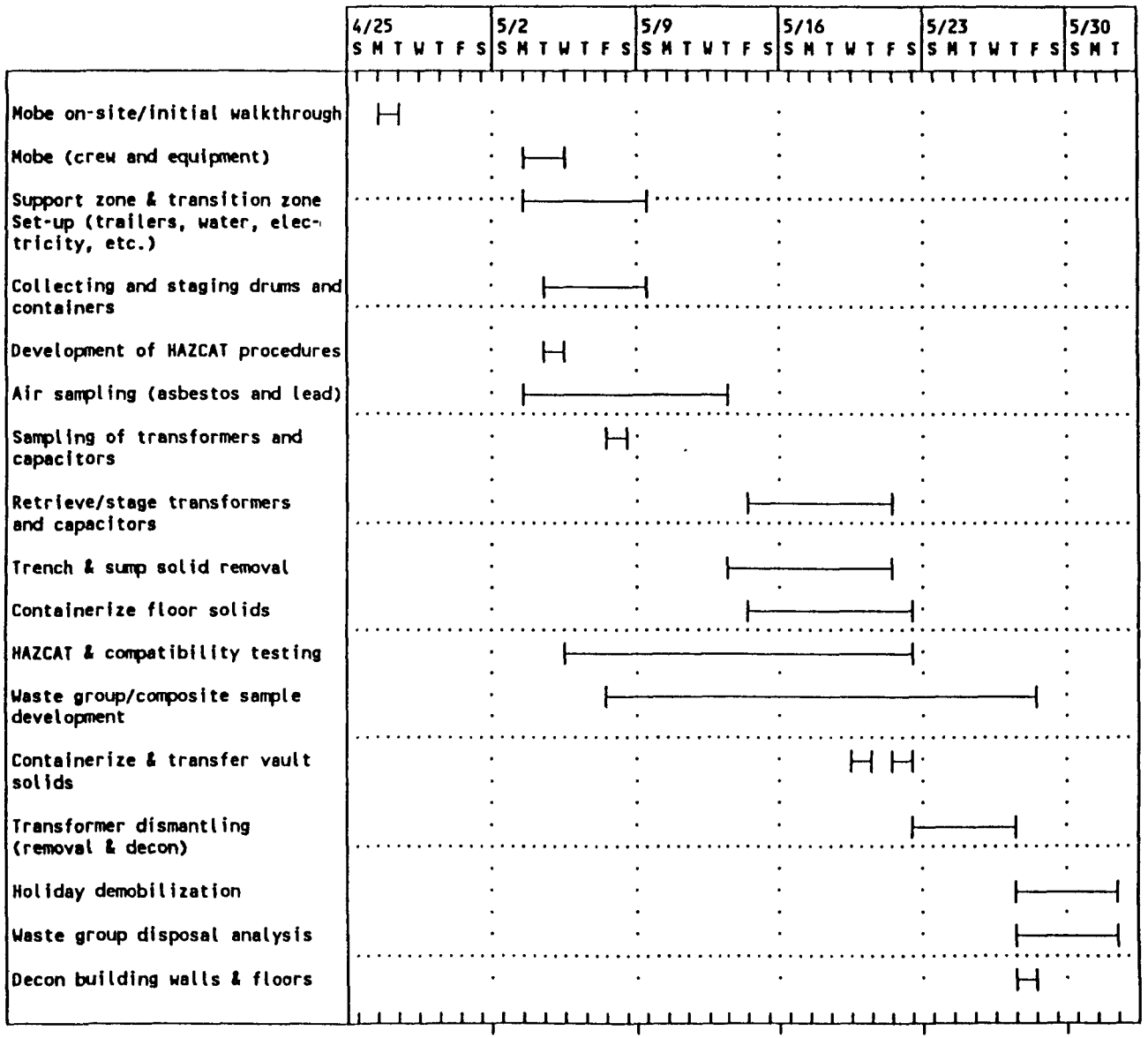
3.0 DIFFICULTIES ENCOUNTERED

The difficulties encountered on site were in general, minimal. Minor problems occurred during the hazacatting and characterization of PCBs, especially PCB oils. There is no accurate way to specifically detect for PCBs in oily liquid. The "Chloro-N-Oil" test kits are not accurate and the ENSYS Kit did not measure PCBs in oil, only soil. The ENSYS Kit on site measured PCB contamination in soil at an estimated power of magnitude of ten times the actual level reported by the laboratory. The PCB concentration in the transformers were expected to be high, but the results obtained from laboratory analysis performed by CAL were actually low. One of the drums that had been hazcatted for chlorine with a negative result for organics appears to contained PCB's. The drum was eventually bulked with the 14 other waste oil drums creating 15 drums that had to be categorized as PCB waste.

4.0 RECOMMENDATIONS

The site is located in a downtown section of Kalamazoo, MI, currently undergoing revitalization. If the property is to be considered for development, the facility's building structures will require an assessment to determine the amount of friable asbestos prior to demolition.

TIMELINE OF SITE ACTIVITIES
Spearefiex, Kalamazoo, Michigan
1993



E.T. Mac Kenzie Company

Contracting & Consulting

4248 W. Saginaw
Grand Ledge, MI 48837

Telephone 627-8408
Fax (517)627-4470

DATE: 10/30/98

TO: Name Steve R.
Company Kalamazoo WWTP
Fax # (616)337-8699

FROM: Name Lisa Snider

E. T. MacKenzie Company
4248 W. Saginaw
Grand Ledge, MI 48837

Dave Snider (517)622-2113
General # (517)627-8408

SUBJECT: Information for Speareflex

NUMBER OF PAGES: 2 (including cover sl

COMMENTS: The estimated quantities are:
Building #12 sump - 100gal.
Building # 9 basement - 5000gal.
Please call me to discuss additional

If the number of pages listed above are not received, please notify our office at (517) 627-8408.

information you may need to approve discharge at (517)622-2129 or car phone (517)388-1680.

TABLE TM1-5
ANALYTICAL RESULTS FOR WATER SAMPLES
MDEQ SPEAREFLEX
JULY AND SEPTEMBER 1997

Sample Location:	W-12-1-PIT	W-9-B
Sample Date:	8/9/97	8/9/97
Inorganics	**Units**	
Arsenic	µg/L	**7.9**
Cadmium	µg/L	**300**
Chromium	µg/L	**840**
Copper	µg/L	**5700**
Mercury	µg/L	**4.9**
Lead	µg/L	**380**
Zinc	µg/L	**5600**
Volatile Organics Method 8260/624	**Units**	
Methylene chloride	µg/L	1.0 U
cis-1,2-Dichloroethene	µg/L	**9.9**
Trichloroethene	µg/L	**60**
Tetrachloroethene	µg/L	**2.2**
Semivolatile Organics Base Neutrals	**Units**	
Fluoranthene	µg/L	1.0 U
Pyrene	µg/L	1.0 U
Benzo(a)anthracene	µg/L	1.0 U
Chrysene	µg/L	1.0 U
bis(2-ethylhexyl)phthalate	µg/L	2.0 U
Benzo(b)fluoranthene	µg/L	2.0 U
Benzo(k)fluoranthene	µg/L	2.0 U
Indeno(1,2,3-c,d)pyrene	µg/L	5.0 U
Benzo(g,h,i)perylene	µg/L	5.0 U

	W-9-B
Inorganics	
Arsenic	**5.3**
Cadmium	**110**
Chromium	**850**
Copper	**1700**
Mercury	**1.2**
Lead	**650**
Zinc	**3750**
Volatile Organics	
Methylene chloride	**7.2**
cis-1,2-Dichloroethene	1.0 U
Trichloroethene	1.0 U
Tetrachloroethene	1.0 U
Semivolatile Organics	
Fluoranthene	**2.4**
Pyrene	**2.7**
Benzo(a)anthracene	**1.2**
Chrysene	**2.1**
bis(2-ethylhexyl)phthalate	**12.0**
Benzo(b)fluoranthene	**3.7 J**
Benzo(k)fluoranthene	**3.5 J**
Indeno(1,2,3-c,d)pyrene	**2.0 T**
Benzo(g,h,i)perylene	**2.6 T**

Notes:
U - Undetected. The analyte was analyzed for but not detected; the associated value shown is the Practical Quantitation Limit (PQL).
T - Value reported is less than criteria of detection.
J - Value is estimated
Analytes detected are in bold and blocked type.

MACKENZIE ENVIRONMENTAL SERVICES, INC.

FACSIMILE TRANSMITTAL SHEET

TO Chad Howell	FROM Lisa Snider
COMPANY City of Kalamazoo	DATE 10/23/98
FAX NUMBER (616) 337-8492	TOTAL NO. OF PAGES INCLUDING COVER 1
PHONE NUMBER (616) 337-8044	SENDER'S REFERENCE NUMBER M8-48
RE Extermination Activities	CC Mike McGowan and Dan Argentati - HLA Mark DuCharme -- MDEQ

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS

Late yesterday, City Pest contacted MacKenzie to verify tentative scheduling of extermination activities for today. Phil Emmons, MacKenzie site supervisor, has travelled to the site today to assist with extermination activities. I apologize for any inconvenience this short notice may have caused.

4248 W. SAGINAW HIGHWAY, GRAND LEDGE MICHIGAN 48837
PHONE (517) 627 8408 FAX (517) 627 4470

THE CITY OF Kalamazoo

PUBLIC SERVICES DEPARTMENT
Wastewater Division
1415 N. Harrison
Kalamazoo, Michigan 49007-256
(616) 337-815
Fax (616) 337-869

A FAX from

Kalamazoo Water Reclamation Plant

Department of Public Services
1415 North Harrison Street
Kalamazoo, MI 49007
Ph.: 616-337-8701
Fx: 616-337-8699

TO: Chad Howell Bunder	FROM: Bob O'Day
FAX NO: 337-8429	DATE SENT: 11-2-98
Number of Pages Transmitted, Including this Cover Sheet: 4	

COMMENTS: chad-
attached: 1. fax from MacKenzie
#15 too high for discharge
2. K-City local limits

Thanks
BOD

Should you have any problems receiving this fax, please contact Patricia Banks at 337-8701.

Lisa Snider
517 388 1680

TRANSMISSION VERIFICATION REPORT

TIME : 11/02/1998 14:40
NAME : KALAMAZOO CITY-ED&P
FAX : 616-337-8429
TEL : 616-337-8044

DATE,TIME	11/02 14:39
FAX NO./NAME	915176274470
DURATION	00:00:39
PAGE(S)	01
RESULT	OK
MODE	STANDARD ECM

KALAMAZOO WATER RECLAMATION PLANT
DISCHARGE LIMITATIONS

Discharges to the Kalamazoo Water Reclamation Plant are controlled by the following limitations:

POLLUTANT	DAILY MAXIMUM CONCENTRATE LIMIT (UG/L)
Cadmium, T	40
Chromium, T	4,670
Copper, T	2,230
Lead, T	110
Nickel, T	1,590
Zinc, T	5,300
Cyanide, T	250
Total Petroleum Hydrocarbon	100 (mg/L)
pH	6.2 - 9.8 S.U.
BETX	15 (mg/L)

Prohibited Discharges - **Condensed from the General Pretreatment Regulations and the Kalamazoo City Code of Ordinances.**

1. PCB's - no discharged allowed. (0.0001 mg/l required detection limit)
2. Mercury - no discharge allowed. (0.0005 mg/l required detection limit)
3. Pollutants which cause a fire or explosion hazard including, but not limited to, wastestreams with a closed cup flash point of less than 140 degrees Fahrenheit or 60 degrees Centigrade.
4. Solid or viscous pollutants in amounts which will cause obstruction in flow.
5. Any pollutant, including oxygen demanding pollutants (BOD, etc.) which will cause interference with wastewater treatment or which will pass through untreated.
6. Heat in amounts which will inhibit biological activity, but in no case heat in such quantities that the temperature at the plant exceeds 104 degrees Fahrenheit or 40 degrees Centigrade.
7. Pollutants which result in the presence of toxic gases, vapors, or fumes in a quantity that may cause health and safety problems for sewer workers or the general public.
8. Any trucked or hauled pollutants except at the designated discharge point at the Kalamazoo Water Reclamation Plant.
9. Radioactive wastes or isotopes, unless their disposal via wastewater is authorized by federal, state, and local regulations, and then only when discharged into the wastewater system does not cause damage or a hazard to the system, persons operating the system or the general public.
10. Wastewater discharged at a rate which upsets or interferes with the treatment process or causes a hydraulic surge.
11. Storm water, uncontaminated groundwater, unpolluted non-contact cooling water.

In addition to these limitations, certain industrial discharges are subject to Categorical Pretreatment Standards.

To Dave Snider @ MacKenzie

Fibertec
Environmental
Services

November 5, 1998

Fibertec Project # 57843
Project Identification: MDEQ Spearflex Site, #M8-48

Ms. Lisa Snider
Mackenzie Environmental
4245 W. Saginaw
Grand Ledge, MI 48837

Dear Ms. Snider,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed as requested and the results compiled in the enclosed report. Please note samples will be disposed of 30 days after reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

Daryl P. Strandbergh
Laboratory Director

DPS/th

Enclosures

2280 Aurelius Road Holt, Michigan 48842 Telephone: (517) 699-0345 Facsimile: (517) 699-0388
29300 Wall Street Wixom, Michigan 48393 Telephone: (248) 348-5598 Facsimile: (248) 348-4896

Fibertec
Environmental
Services

ANALYTICAL LABORATORY RESULTS

CLIENT IDENTIFICATION: MACKENZIE ENVIRONMENTAL FIBERTEC PROJ. NO.: 57843

FIBERTEC SAMPLE NO.: 001 SAMPLE MATRIX: WATER

CLIENT SAMPLE INFORMATION

PROJECT IDENTIFICATION: MDEQ SPEARFLEX SITE SAMPLE DESC.: BLD #9, BASEMENT WATER

PROJECT NUMBER: MS-48 SAMPLE NUMBER: 1

DATE SAMPLED: 10/30/98 C.O.C. NUMBER: 13889

ANALYTE	RESULTS	UNITS	DL	METHOD	BATCH NO.	DATE OF PREPARATION	DATE OF ANALYSIS	TECH. INIT.
BENZENE	ND	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
TOLUENE	ND	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
ETHYLBENZENE	ND	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
TOTAL XYLENES	ND	ug/L	3.0	8260	11748	11/4/98	11/4/98	AL
AROCLOR 1016	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1221	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1232	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1242	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1248	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1254	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1260	ND	ug/L	0.2	8082	11646	11/3/98	11/4/98	CTM
TOTAL CADMIUM	3.7	ug/L	0.5	6020	11750	11/4/98	11/4/98	BJK
TOTAL CHROMIUM	ND	ug/L	50	6020	11750	11/4/98	11/4/98	BJK
TOTAL COPPER	52	ug/L	25	6020	11750	11/4/98	11/4/98	BJK
TOTAL LEAD	12	ug/L	3.0	6020	11750	11/4/98	11/4/98	BJK
TOTAL MERCURY	ND	ug/L	0.2	245.1	11738	11/2/98	11/3/98	BJK
TOTAL NICKEL	ND	ug/L	50	6020	11750	11/4/98	11/4/98	BJK
TOTAL ZINC	240	ug/L	20	6020	11750	11/4/98	11/4/98	BJK
CORROSIVITY, PH	7.8	PH	—	9040	N/A	11/2/98	11/2/98	BJK
OIL & GREASE	3300	ug/L	2000	1664	N/A	11/2/98	11/4/98	LN/KB

COMMENTS:

ND = NOT DETECTED AT OR ABOVE DETECTION LIMIT
DL = DETECTION LIMIT

2280 Aurelius Road Holt, Michigan 48842 Telephone: (517) 699-0345 Facsimile: (517) 699-0388
29300 Wall Street Wixom, Michigan 48393 Telephone: (248) 348-5598 Facsimile: (248) 348-4896

Fibertec
Environmental
Services

ANALYTICAL LABORATORY RESULTS

CLIENT IDENTIFICATION: MACKENZIE ENVIRONMENTAL FIBERTEC PROJ. NO.: 57843

FIBERTEC SAMPLE NO.: 002 SAMPLE MATRIX: WATER

CLIENT SAMPLE INFORMATION

PROJECT IDENTIFICATION: MDEQ SPEARFLEX SITE SAMPLE DESC.: BLD #12, SUMP WATER

PROJECT NUMBER: M9-48 SAMPLE NUMBER: 2

DATE SAMPLED: 10/30/98 C.O.C. NUMBER: 13889

ANALYTE	RESULTS	UNITS	DL	METHOD	BATCH NO.	DATE OF PREPARATION	DATE OF ANALYSIS	TECH. INIT.
BENZENE	ND	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
TOLUENE	8.0	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
ETHYLBENZENE	ND	ug/L	1.0	8260	11748	11/4/98	11/4/98	AL
TOTAL XYLENES	ND	ug/L	3.0	8260	11748	11/4/98	11/4/98	AL
AROCLOR 1016	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1221	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1232	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1242	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1248	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1254	19	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
AROCLOR 1260	ND	ug/L	10	8082	11646	11/3/98	11/4/98	CTM
TOTAL CADMIUM	32	ug/L	0.5	6020	11750	11/4/98	11/4/98	BJK
TOTAL CHROMIUM	ND	ug/L	50	6020	11750	11/4/98	11/4/98	BJK
TOTAL COPPER	34	ug/L	25	6020	11750	11/4/98	11/4/98	BJK
TOTAL LEAD	4.5	ug/L	3.0	6020	11750	11/4/98	11/4/98	BJK
TOTAL MERCURY	ND	ug/L	0.2	245.1	11738	11/2/98	11/3/98	BJK
TOTAL NICKEL	298	ug/L	50	6020	11750	11/4/98	11/4/98	BJK
TOTAL ZINC	280	ug/L	20	6020	11750	11/4/98	11/4/98	BJK
CORROSIVITY, PH	8.0	PH	—	9040	N/A	11/2/98	11/2/98	BJK
OIL & GREASE	5400	ug/L	2000	1664	N/A	11/2/98	11/4/98	LN/KB

COMMENTS:
RAISED PCB DETECTION LIMITS DUE TO SAMPLE MATRIX.
ND = NOT DETECTED AT OR ABOVE DETECTION LIMIT
DL = DETECTION LIMIT

2280 Aurelius Road Holt, Michigan 48842 Telephone: (517) 699-0345 Facsimile: (517) 699-0388
29300 Wall Street Wixom, Michigan 48393 Telephone: (248) 348-5598 Facsimile: (248) 348-4896