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Rev. 07/10/02

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2-18-1968

Growth Is Key at Carton Co.

Growth was the keynote of Michigan Carton Co. in 1967, and should continue to be so in 1968.

Net sales rose 8.6 per cent to $21.5 million last year, according to Norman W. Schmitzer, vice president and treasurer. A "sizeable increase" in net income is anticipated when all the figures are finalized.

Also in 1967, the 60-year-old local corporation made plans for a $2 million program of plant expansion and modernization, part of which already is under way. The rest will begin in the fall.

Sales volume increase — from a 6 per cent gain in 1966 to an 8.6 per cent gain last year — came partly from expansion of egg carton business but more from improvement and variety of products, Schmitzer said.

"We look for a good year again in 1968," he said, "and our projections are for continued growth."

The company, which manufactures boxboard at its Fountain Street and Angell Street plants here, also converts paper board into cartons here and in a plant in Atlanta, Georgia. All three plants are part of the expansion program.

In 1967, a $100,000 building addition was occupied at the Atlanta plant and a $300,000 print-cut press was installed to increase its converting of paperboard into egg cartons.

Work already has been started to install new clay-coating and drying equipment in the Fountain Street plant here. In the spring work will begin on a 30,000-square-foot warehouse and finishing room estimated to cost $400,000.

And next fall the complete rebuilding of the half block long No. 1 paper machine at the Fountain Street plant will be undertaken — a $1.2 million project. This will make the first use in this country of new Japanese inventions for the forming and processing of paperboard.

"This project will make possible higher speeds and more flexibility in production," Schmitzer said, "as well as more uniform quality of product than ever before."

The firm's $2 million expansion program is in addition to its usual yearly allocation of some $1.5 million to replacement and improvement of plant and equipment.

Last year a half million dollars went into a new five-color offset press in the local converting plant.

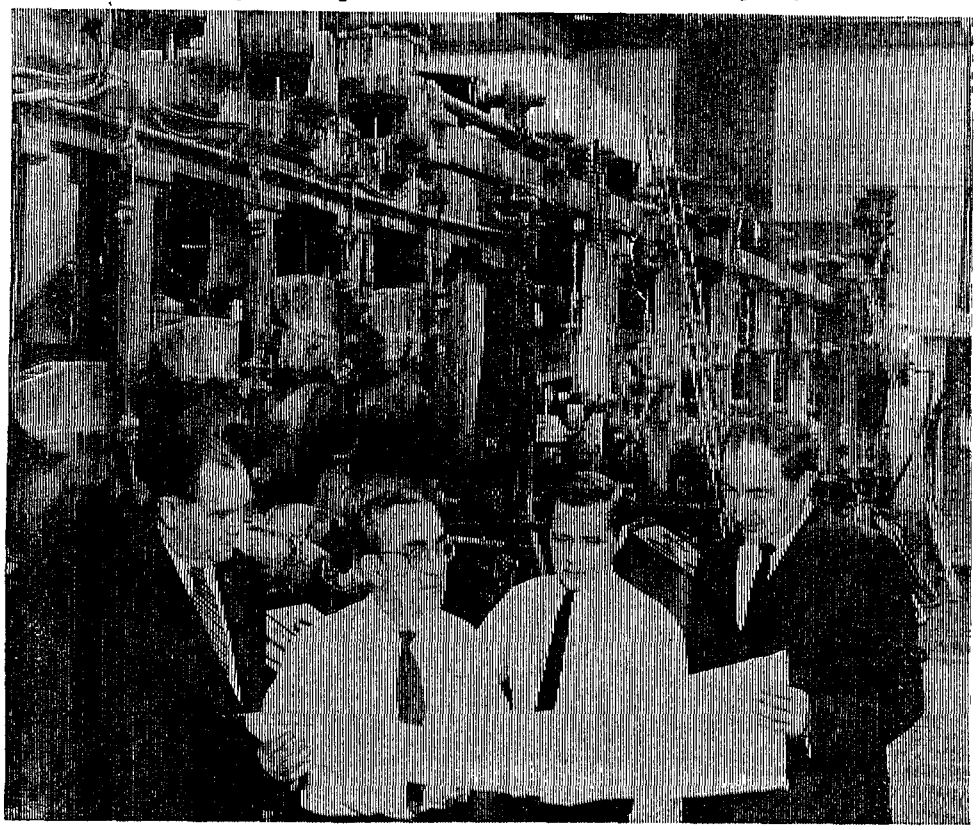
A large part of the company's production is folding cartons for the food industry, Schmitzer said, but many other types of folding containers are manufactured for household articles and industrial supplies.

Employment last year remained at an average 840, but payroll rose from 6.4 million in 1966 to $6.8 million in 1967, Schmitzer said.

Dan Int-Hout Jr. is president of Michigan Carton Co., and Lawrence G. Fell is board chairman. Other officers besides Schmitzer as vice president and treasurer include three added last year — H. L. Chorpening, vice president-sales; J. L. Barclay, vice president-procurement, and Robert A. Armstrong, vice president-paperboard manufacturing.

Carlton H. Cameron was elevated to senior vice president-manufacturing.

Other officers, all reelected at last year's annual meeting, are James R. Kirkpatrick, senior vice president-marketing; Robert G. Pender, vice president-paperboard marketing; Louis J. Philipps, vice president-engineering; Joseph G. McCarthy, secretary and controller, and Verne K. Livingston, assistant treasurer.



This No. 1 paper machine in Michigan Carton Co.'s Fountain Street plant will produce folding grades of boxboard faster, more flexibly and of more uniform quality after a $1.2 million rebuilding scheduled to start next fall. This first use of new Japanese inventions in the U.S. is planned as part of a $2 million expansion and modernization program for the 61-year-old local company whose net sales last year topped $21.5 million, a 1967 gain of 8.6 per cent. Examining the plans are, from left, Carlton H. Cameron, senior vice president-manufacturing; Nick A. Pennetti, plant superintendant; Terry A. Tiffany, assistant superintendent, and Robert A. Armstrong, vice president—paperboard manufacturing.

—(Staff Photo by Corwin J. Wherrett)

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ASSET PURCHASE AGREEMENT BETWEEN
ST. REGIS CORPORATION AND MICHIGAN
HOLDING CORP.

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ASSET PURCHASE AGREEMENT

PARTIES: St. Regis Corporation, a New York corporation ("Seller") and Michigan Holding Corp., a Delaware corporation ("Buyer").

DATE: April 3, 1984.

PREAMBLE: Seller has its principal office at New York City and is engaged in the operation of a folding carton manufacturing plant and a paperboard mill both of which are located on Fountain Street, in Battle Creek, Michigan. Buyer is a wholly-owned subsidiary of Field Container Corporation, a Delaware Corporation.

The aforesaid folding carton plant and the aforesaid Fountain Street paperboard mill operated by Seller are sometimes hereinafter referred to collectively as "the Plants" and individually as "the folding carton plant" or "the paperboard mill" as the case may be. Seller desires to sell substantially all of the assets used in the operation of the Plants, as a going concern and Buyer desires to purchase said assets all on the terms and conditions hereinafter set forth.

CONSIDERATION: Mutual covenants of the parties as hereinafter set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged.

TERMS:

1. Sale of Assets.

1.1. Seller agrees to sell, assign, transfer and convey to Buyer, at the Closing (as hereinafter defined) and Buyer agrees to purchase from Seller, at the Closing, substantially all of the assets constituting, or used in the operation of, the Plants, real and personal, tangible and intangible, of every kind and wheresoever situated, which are owned by

Seller or in which Seller has any right, title or interest, except as provided in Paragraph 1.2. The assets which are the subject hereof are hereinafter referred to as the "Assets" and include:

(a) Any and all trademarks, trademark registrations and trademark applications, tradenames, copyrights, patents and patent applications, patent and other licenses, processes, formulae, trade secrets, inventions, and royalties, including all rights to sue for past infringements;

(b) All lands, leaseholds and other real estate interests included in the Plants;

(c) All of the inventory of the Plants as of the close of business on the last business day prior to the Closing Date (the "Sale Date)"), including raw materials and Stock Room Items (as defined in paragraph 2.4), work in process and finished goods but, excluding inventory which has been sold by Seller but has not yet been shipped ("Pre-sold Inventory") including inventory produced for and sold to Buyer and its affiliate, and the inventory referred to in paragraph 1.2(e);

(d) All furniture, fixtures, machinery and equipment used in the operation of the Plants:

(e) Tangible and intangible personal property of all kinds;

(f) Intentionally omitted.

(g) Contract rights of any kind relating to the operation of the Plants, including without limitation rights arising under employment contracts, restrictive covenants and obligations of present and former officers and employees and of individuals and corporations and rights arising under joint venture agreements or arrangements and equipment leases; and

(h) Records relating to the operation of the Plants.

The Assets shall include, without limitation, all of the assets reflected on the Pro Forma Balance Sheet of Seller as defined in paragraph 3.1(i) , except for those which have been transferred or disposed of in the ordinary course of business after the date of the aforesaid Pro Forma Balance Sheet.

1.2. Notwithstanding the foregoing, this sale shall not include the following assets of Seller which relate to the operation of the Plants:

(a) Cash and cash equivalents, including money on deposit with banks and others, certificates of deposit, commerical paper, stocks, bonds and other investments;

(b) Accounts receivable;

(c) Insurance policies;

(d) Causes of action, judgments, claims and demands of whatever nature;

(e) all fuel oil on hand at the Plants.

1.3. Seller agrees to sell, assign, transfer, convey and deliver the Assets on the Closing Date free and clear of all liens, mortgages, charges and encumbrances of every kind, nature and description except as set forth in Schedule 1.3 attached hereto and by this reference made a part hereof and with covenants of warranty up to, including and surviving the Closing Date. Except as otherwise provided in this agreement, the Assets are being sold on an "as is, whereis" basis.

1.4. Intentionally omitted.

2. Consideration and Manner of Payment.

2.1. The purchase price of the Assets shall be equal to the sum of:

(a) $2,500,000;

(b) 85% of the book value of the inventory other than the Stock Room Items (as defined in paragraph 2.4) as reflected in the Certificate of Inventory Purchase Price provided for in paragraph 2.4

hereof, it being agreed that for purposes hereof book value of such inventory shall be equal to Seller's cost or, in the case of finished goods inventory, the lower of Seller's cost or its market price, determined in each case on an average cost basis in accordance with generally accepted accounting principles consistently applied; and

(c) 60% of Seller's cost with respect to the Stock Room Items as reflected in the Certificate of Inventory Purchase Price.

less the sum of $2,300,000

2.2. The purchase price of the Assets shall be allocated among them as set forth in Schedule 2.2 attached hereto.

2.3. The purchase price of the Assets shall be payable by delivery to Seller at the Closing of:

(a) $1,000,000 in cash or certified or cashier's checks or by wire transfer.

(b) Buyer's promissory note in form substantially identical to Exhibit 2.3(b) attached hereto in the principal amount of $1,500,000.

(c) Buyer's promissory note in form substantially identical to Exhibit 2.3(c) attached hereto in principal amount equal to the balance of the purchase price of the Assets.

2.4. Seller and Buyer shall cause their respective represen-tatives to take a physical inventory of the inventory on hand at the Plants at the close of business on the Sale Date and to prepare jointly a Certificate of Inventory Purchase Price in form susbstantially identical to Exhibit 2.4 attached hereto, which shall set forth as to the inventory included in the transaction which is the subject of this agreement, including the materials described in Schedule 2.4 which are referred to herein as "the Stock Room Items", the total price thereof determined in accordance with paragraphs 2.1(b) and (c) hereof as well as the amount due Buyer pursuant to paragraph 2.6. Such representatives shall, promptly upon completion thereof, deliver copies of the Certificate of Inventory Purchase Price signed by each of them to each of the parties hereto and such parties shall, having agreed on the purchase price of the inventory, sign a copy of the Certificate of Inventory Purchase Price. In the

event of disagreement by the parties as to the purchase price of the inventory or any portion thereof which they are unable to resolve prior to the closing, this agreement shall be terminated and shall be of no further force or effect whatsoever and neither party shall be liable to the other in connection with the subject disagreement.

2.5. Buyer will, in order to secure payment of the promissory note provided for in paragraph 2.3(b), execute and deliver to Seller at the closing a mortgage in form substantially identical to exhibit 2.5(A) attached hereto creating a first mortgage lien on the Real Property owned by Seller and conveyed to Buyer pursuant hereto and, in order to secure payment of the promissory note referred to in paragraph 2.3(c), will execute and deliver to Seller at the closing a security agreement in form substantially identical to Exhibit 2.5(c) attached hereto creating a first security interest in Buyer's inventory. In addition, Buyer will execute and deliver to Seller at the closing such Uniform Commercial Code financing statements or other documents reasonably requested by Seller to perfect Seller's security interest in Buyer's inventory.

2.6 Buyer will following the Closing Date continue to store Seller's Pre-sold Inventory and will ship such inventory for Seller's account as directed by Seller. In consideration of the foregoing, Buyer will be entitled to an amount equal to 10% of the sale price of such Presold Inventory which amount shall be reflected in the Certificate of Inventory Purchase Price and will be deducted from the principal amount of the Promissory Note provided for in paragraph 2.3(c) hereof.

2.7 Buyer will at the Closing assume the following liabilities and will perform the obligations of Seller as follows:

(a) Those obligations of Seller which are referred to in Schedule 2.7 attached hereto; and

(b) Seller's obligations under all material contracts, agreements, relationships and commitments entered into by Seller in connection with the operation of the Plants in the ordinary course of business between the date of this Agreement and the Closing Date, which shall have been identified in notices given to Buyer pursuant to paragraph 3.2 and approved by Buyer in writing in accordance with paragraph 9.1(g).

The obligations referred to in paragraphs (a) and (b) are referred to herein as the "Assumed Liabilities."

2.8. The parties will prorate as of the Closing Date water and other utility charges, fuels, prepaid services contracts which are assigned, general real estate taxes with respect to the Real Property (as hereinafter defined) and personal property taxes, both on a calendar year basis, rebates due under the agreements referred to at items 6 and 7 of Schedule 3.1(g), and other similar items. An amount equal to the net prorations shall be paid in cash to Seller or Buyer, as the case may be, within 30 days after the Closing.

2.9. Any stamp tax imposed on the transfer of the Real Property shall be paid by Seller and Seller shall meet any other requirements with regard to a transfer or transaction tax with respect to the transactons which are the subject of this agreement.

3. Seller's Warranties.

3.1. Seller hereby represents and warrants as follows:

(a) Organization. Seller is a corporation duly organized, validly existing and in good standing under the laws of the State of New York.

(b) Authority. Seller has full power, right and authority to enter into, and perform its obligations under, this agreement. The execution, delivery and performance of this agreement by Seller have been duly and properly authorized by proper corporate action in accordance with applicable law and with the Certificate of Incorporation and By-laws of Seller and this agreement constitutes a valid and binding obligation of Seller, enforceable against it in accordance with its terms.

(c) Seller's Title. Seller holds good, valid and marketable title to all of the Assets free and clear of any liens, mortgages, charges and encumbrances of every kind, nature and description except as set forth in Schedule 1.3 attached hereto and by this reference made a part hereof and has full power, right and authority to sell the Assets in accordance with the terms of this agreement.

(d) Buyer's Title on Consummation. Upon consummation of the transaction which is the subject of this agreement in accordance with the terms hereof, Buyer will be vested with good and marketable title to all of the Assets free and clear of any liens, mortgages, charges or encumbrances of any kind except as set forth in Schedule 1.3 attached hereto and by this reference made a part hereof.

(e) Transaction Not a Breach. Neither the execution and delivery of this agreement nor its performance will conflict with or result in a breach of the terms, conditions or provisions of the Certificate of Incorporation or By-laws of Seller or any contract, agreement, mortgage, trust deed, note, bond indenture or other instrument or obligation of any nature to which Seller is a party or by which Seller is bound or by which Seller, the operation of the Plants, or the Assets may be affected; and neither the execution and delivery of this agreement nor its performance or the operation of the Plants by Buyer after the Closing Date in substantially the same manner in which they have been operated up to the date hereof will contravene or violate any statute or any judicial or governmental regulation, order, injunction, judgment or decree or require the approval, consent or permission of any governmental or regulatory body or authority, except as set forth in Schedule 3.1(e); and Seller has received no notice which is inconsistent with the foregoing.

(f) Patents, Trademarks, Copyrights. All patents, patents pending, trademarks, tradenames, service marks and copyrights or applications therefor and licenses pertaining thereto owned by the Seller or by an affiliate (as defined in Paragraph 11.2) of Seller or used in the operation of the Plants are described and set forth with particularity in Schedule 3.1(f), attached hereto and by this reference made a part hereof, along with information as to the registration thereof. All of such patents, patents pending, trademarks, tradenames, corporate names, service marks and copyrights are owned by Seller and Buyer will upon consummation of this Agreement in accordance with its terms, acquire complete ownership, use and control thereof, free of any royalty obligations, except as

otherwise noted in said Schedule 3.1(f). All of the patents, trademarks, tradenames, copyrights and service marks listed in Schedule 3.1(f) are in good standing, free and clear of any encumbrances. There is no claim pending or, to the best of Seller's knowledge, threatened against the Seller with respect to alleged infringement of any patent, trademark, tradename, service mark or copyright owned by another.

(g) Material Contracts. Attached hereto as Schedule 3.1(g) is a true and complete list of every material contract, agreement, relationship, or commitment, written or oral, to which Seller is a party which relates, directly or indirectly, to the operation of the Plants. For purposes of this Paragraph 3.1(g), a contract, agreement, relationship or commitment is deemed material if it gives rise to rights or liabilities on the part of Seller exceeding $25,000 in the aggregate, or is one of a series of related contracts, commitments, agreements or relationships which in the aggregate give rise to rights or liabilities exceeding such amount, and is not terminable on 30 days notice or less. Seller has furnished Buyer a true and accurate copy of each written agreement and a true and accurate resume of each oral contract, agreement or commitment so listed. Except as set forth in said Schedule 3.1(g), all such contracts, agreements, relationships and commitments are in full force and effect, enforceable in accordance with their terms and no party is in material default or alleged to be in material default with respect thereto.

(h) Real Estate. The only real estate used in the operation of the Plants is the real estate which is described in Schedule 3.1(h) attached hereto and is hereinafter referred to as the "Real Property", and none of the Assets are situated at any location other than the Real Property, except as set forth in Schedule 3.1(h). Except as set forth in Schedule 3.1(h) there are presently no leases in existence with respect to the Real Property. Seller has (and by conveyance or assignment of the Real Property in the manner provided in Paragraph 6.3, will convey and assign to Buyer) all easements and rights, including, but not limited to, easements for power lines, water lines, sewers,

roadways and other means of ingress and egress necessary to the operation of the Plants as they are now operated. All notices of completion and certificates of occupancy required under applicable local law with respect to the Real Property have been obtained and are in good standing. Neither the whole nor any portion of the Real Property is subject to any pending condemnation, taking or other similar proceeding by any public authority, and Seller neither knows nor has any grounds to believe that any such condemnation or taking is threatened or contemplated, and, to the best of Seller's knowledge, there is no plan, study or effort by any governmental authority or agency which in any way affects or would affect the present use or zoning of the Real Property nor any existing, proposed or contemplated plan to widen, modify or realign any street or highway. Neither the Real Property nor the occupancy or operation thereof is in violation of any law or any building, zoning, fire, health, environmental or other ordinance, code or regulation, and Seller has received no notice alleging any such violation or requiring or calling attention to the need for any work, repairs, construction, alterations or installation on or in connection with the Real Property, which has not been heretofore complied with by Seller at its sole cost and expense. Seller has the legal and contractual rights to use the Real Property for the operations presently conducted thereon.

(i) Financial Statements. Seller has delivered to Buyer a true and accurate and complete copy of Seller's "Pro Forma Schedule of Financial Status as of February 25, 1984" relative to the Plants, which is referred to herein as the "Pro Forma Balance Sheet." Seller represents and warrants that the fixed assets shown on the Pro Forma Balance Sheet are carried at actual cost less depreciation computed on a consistent basis. The inventory shown on the Pro Forma Balance Sheet is valued in the manner provided in paragraph 2.1(b) hereof.

(j) Since the date of the Pro Forma Balance Sheet Seller has operated the Plants only in the ordinary course, and has incurred no liabilities with respect thereto other than in the ordinary course of business. Since that date there has not been:

(i) Any change in the financial condition, assets or liabilities of the Plants other than changes occurring in the ordinary course of business, none of which has been materially adverse;

(ii) Any damage, destruction or loss of any property used in the operation of the Plants, whether or not covered by insurance, materially and adversely affecting the Plants;

(iii) Voluntary or involuntary sale, transfer, surrender, abandonment or other disposition of any kind by the Seller of any assets or property rights relating to or used in the operation of the Plants, except in each case sale of inventory and collection of accounts in the ordinary course of business;

(iv) Loss or threatened loss of customers of the Plants who in the aggregate accounted for in excess of 5% of sales of the Plants during Seller's last full fiscal year or change in the relationship of the Seller with any customer or supplier which might reasonably be expected to materially and adversely affect the Plants or their operation;

(v) Strike, union organizational activity or other similar occurrence which might reasonably be xpected to materially and adversely affect the Plants or their operation;

(vi) Intentionally left blank.

(vii) To Seller's best knowledge, any change in applicable law or governmental policy or any change in technology which might reasonably be expected to materially and adversely affect the Plants or their operation;

(viii) Incurrance of debts, liabilities or obligations of any nature in connection with the operation of the Plants whether accrued, absolute, contingent, direct, indirect, perfected or otherwise and whether due or to become due except current liabilities incurred for services rendered or goods supplied in the ordinary course of business, liabilities on

account of taxes and governmental charges but not penalties, interest or fines in respect thereof, and obligations or liabilties incurred by virtue of the execution of this agreement;

(ix) An occurrence not included in clauses (i) through (viii) which has resulted or might reasonably be expected to result in a material adverse change in the Assets or the Plants or their operations.

(k) Attached hereto as Schedule 3.1(k) is a true, correct and complete list setting forth the names and current salaries of all of the employees of the Seller engaged in operations of the Plants. There are no independent contractors who render services on a regular basis to Seller in connection with the operation of the Plants.

(l) Assets Include All Assets Used In Operation of Plants. The Assets comprise all of the assets, property and rights of every type and description, real, personal and mixed, necessary to or used in the operation of the Plants as presently operated and, except for changes occurring in the ordinary course of business, as operated on the date of the Pro Forma Balance Sheet referred to in Paragraph 3.1(i).

(m) Interest of Seller in Customers, etc. Except as set forth in Schedule 3.1(m), neither the Seller nor any of its affiliates has any direct or indirect interest in any competitor, supplier or customer of the Plants or in any other person with whom the Seller has any business relationship which relates directly or indirectly to the operation of the Plants.

(n) Properties. The Plants are not in violation of any zoning or other ordinances; nor has any notice of any claimed violation of any such ordinance been served on Seller. To Seller's best knowledge, the Plants, including machinery and equipment, are in good operating condition and repair, subject only to ordinary wear and tear which is not such as to adversely affect the operation of the Plants. Attached hereto as Schedule 3.1(n) is a correct and complete list of major items of tangible personal

property used by Seller in connection with the operation of the Plants. Except as set forth in said Schedule 3.1(n), no personal property used by Seller in connection with the operation of the Plants is held under any lease, security agreement, conditional sales contract or other title retention or security arrangement or is located other than at the Real Property.

(o) Litigation. Except as set forth in Schedule 3.1(o) attached hereto, there is no suit, action, arbitration proceeding, or investigation pending or threatened against Seller, or to which Seller is otherwise a party, which may affect the Plants or the Assets, before any court, or before any governmental department, commission, board, agency, or instrumentality; nor does Seller know of any basis for any such action, proceeding, or investigation; and Seller is not engaged in any legal action to recover monies due it or for damages sustained by it in connection with the Assets or the operation of the Plants.

(p) Compliance with Applicable Laws. Seller has complied with all laws, regulations, writs, injunctions, decrees, and orders applicable to the Assets or to the operation of the Plants and has received no notice of any alleged violation of any such law, regulation, writ, injunction decree or order. Without limiting the generality of the foregoing, Seller has in the operation of the Plants complied with all applicable federal, state and local laws, ordinances or regulations relating to environmental matters or to the employment of labor, including without limitation the provisions thereof relating to wages and hours and to collective bargaining, and Seller is not liable for any arrears of wages or any taxes or penalties for failure to comply with any such laws, ordinances or regulations.

(q) Trade Secrets. All trade secrets of Seller which relate to the operation of the Plants, including customer lists, processes, know-how, computer programs and other technical data are listed in Schedule 3.1(q) attached hereto and by this reference made a part hereof, provided that Buyer acknowledges such descriptions are such as will not reveal the said trade secrets. The specific

location of the documentation relative to such trade secrets is also set forth in Schedule 3.1(q). Such documentation is in each case current, accurate and sufficient in detail and content to identify and explain it and to allow its full and proper use by Buyer without reliance on other persons. Seller is the sole owner of each of the trade secrets listed in Schedule 3.1(q) free and clear of any liens, encumbrances, restrictions or legal or equitable claims of others except as specifically set forth in Schedule 3.1(q). The Seller has taken all reasonable security measures to protect the secrecy, confidentiality and value of such trade secrets and such of Seller's employees or other persons who alone or in concert with others developed, invented, discovered, derived, programmed or designed such trade secrets or who have knowledge of or access to information relating to them have been put on notice and if appropriate have entered into agreements that these secrets are proprietary to Seller and are not to be divulged or misused. All of the trade secrets referred to in Schedule 3.1(q) are presently valid and protectable and are not part of the public domain nor have they been used, divulged or appropriated for the benefit of any past or present employees or other persons or to the detriment of the Plants or their operations.

(r) Insurance Policies. Seller maintains such insurance with respect to the Plants and their operations as is customary in other similar facilities. Such policies are in full force and effect, and Seller is not in default under any of them.

(s) Licenses and Permits. Attached hereto as Schedule 3.1(s) is a list of all licenses and permits held by Seller which relate to the Plants or their operation issued by any governmental authority, which constitute all such licenses and permits necessary to the operation of the Plants. All such licenses and permits are in full force and effect.

(t) No Misrepresentation. None of the information contained in the representations and warranties of Seller and/or set forth in this agreement or in any of the certificates, schedules, lists, documents, exhibits, or other instruments delivered, or to be

delivered, to Buyer as contemplated by any provision hereof, contains any untrue statement of a material fact, or omits to state a material fact necessary to make the statements contained herein or therein not misleading.

3.2. Between the date hereof and the Closing Date, Seller agrees to notify Buyer in writing promptly of any occurrence or state of facts which will result in any of the warranties and representations in Paragraph 3.1 not being true and correct if restated as of the Closing Date. All of Seller's warranties and representations, except as modified in such notices, shall be deemed to have been restated by Seller as of the Closing Date.

4. Buyer's Warranties.

4.1. Buyer hereby represents and warrants as follows:

(a) Buyer is a corporation duly organized and existing under the laws of the State of Delaware and has full power, right and authority to purchase the Assets in accordance with this agreement. The execution, delivery, and performance of this agreement by Buyer have been duly and properly authorized by proper corporate action in accordance with applicable law and with the Articles of Incorporation and By-Laws of Buyer.

(b) Neither the execution and delivery of this agreement nor its performance will conflict with or result in a breach of the terms, conditions or provisions of the Certificate of Incorporation or By-Laws of Buyer or any contract, agreement, mortgage or other instrument or obligation of any nature to which Buyer is a party or by which Buyer is bound; and neither the execution and delivery of this agreement nor its performance will contravene or violate any statute or any judicial or governmental regulation, order, injunction, judgment or decree or require the approval, consent or permission of any governmental or regulatory body or authority except as set forth in Schedule 4.1(b); and Buyer has received no notice which is inconsistent with the foregoing.

4.2. Between the date hereof and the Closing Date, Buyer agrees to notify Seller in writing promptly of any occurrence or state of facts which will result in any of the warranties

and representations in Paragraph 4.1 not being true and correct if restated as of the Closing Date. All of Buyer's warranties and representations, except as modified in such notices, shall be deemed to have been restated by Buyer as of the Closing Date.

5. Transferee Liability. The parties agree that Buyer will not by virtue of the transaction which is the subject hereof assume any liabilities or obligations of Seller whatsoever except the Assumed Liabilities and, accordingly, Seller agrees to take all reasonable actions which Buyer may request so as to fully protect Buyer from and against any and all transferee liability arising out of the transaction which is the subject of this agreement except the Assumed Liabilities.

6. Closing.

6.1. The transaction which is the subject of this agreement shall be closed on April 3, 1984 at 10:30 a.m., New York time, or on such other date and time as the parties shall mutually agree upon in writing ("the Closing Date"). The closing shall take place at the offices of Seller at 237 Park Avenue, New York City.

6.2. At the Closing:

(a) Seller will deliver to Buyer, against payment of the cash portion of the purchase price of the Assets as provided for in paragraph 2.3(a), and delivery of Buyer's promissory note as provided in said paragraph 2.3(b);

(i) Such bills of sale, assignments, and other good and sufficient instruments of conveyance as shall be effective to vest Buyer with good and marketable title to the Assets.

(ii) All of Seller's business papers relating to the Plants, including, without limitation, originals of all contracts included in the Assets, all customer lists, and lists of prospective customers, customers' orders and advertising materials; provided that the presence thereof on the Real Property on the Closing Date shall be deemed delivery thereof.

(iii) Intentionally omitted.

(iv) The opinion of Seller's counsel provided for in paragraph 9.1(d) hereof.

(v) Any certificates and/or receipts from Michigan governmental agencies required to be obtained under applicable law in connection with transfer of the Assets.

(vi) A copy of resolutions of Seller's directors certified by Seller's secretary as having been duly adopted and being in full force and effect, authorizing Seller's execution and performance of this agreement.

(vii) The "Real Estate Conveyancing Materials" provided for at Paragraph 6.3.

(viii) Intentionally omitted.

(ix) Such other documents and instruments as Buyer may reasonably require in order to effectuate the transaction which is the subject hereof.

All documents delivered to Buyer shall be in form and substance reasonably satisfactory to Katten, Muchin, Zavis, Pearl & Galler, counsel for Buyer, and the instrument or instruments conveying any Assets the effective assignment of which requires the consent of a third party or parties shall be accompanied by written consent of such party or parties.

(b) Buyer will deliver to Seller, simultaneously with delivery of the items referred to in subparagraph (a) above, except as otherwise provided in paragraph 2.3(b) hereof:

(i) Its certified check or cashier's check payable to Seller or wire transfer to Seller's account in the amount provided for in paragraph 2.3(a) hereof.

(ii) Buyer's promissory notes as provided for in Paragraph 2.3(b) and 2.3(c) hereof.

(iii) The mortgage and security agreement provided for in paragraph 2.5 hereof

(iv) Intentionally omitted.

(v) A copy of a resolution of Buyer's board of directors certified by Buyer's secretary as having been duly adopted and being in full force and effect, authorizing Buyer's execution and performance of this agreement.

(vi) The opinion of Buyer's counsel provided for in Paragraph 10.1(d) hereof.

6.3. In order to consummate conveyance of the Real Property the parties agree as follows:

(a) Seller will deliver to Buyer at the Closing:

(i) Seller's warranty deed in form substantially identical to Exhibit 6.3(A) attached hereto and by this reference made a part hereof;

(ii) A lease in form and substance substantially identicle to Exhibit 6.3(B) attached hereto and by this reference made a part hereof; and

(iii) Seller's quit claim deed in form substantially identical to Exhibit 6.3(C) attached hereto and by this reference made a part hereof.

Seller agrees to convey title to the Real Property free of all liens and encumbrances other than the following which are hereinafter sometimes referred to as "Permitted Exceptions":

(A) general real estate taxes not due;

(B) the additional matters described in Schedule 6.3 attached hereto.

(b) Seller has at its sole cost and expense delivered to Buyer the following:

(i) Three (3) copies of a current survey of the Real Property made and certified by a licensed surveyor locating all improvements on the Real Property as of such date, setting forth the

common street address of the Real Property, and showing access to public roads or ways, showing no encroachments except as set forth in Schedule 6.3 and all visible and recorded easements, building lines, and utilities. The survey shall contain the certification that there are no encroachments of lot or building lines or obstructed easements except as noted in Schedule 6.3. The legal description in the survey shall coincide exactly with that on the title commitment to be furnished by Seller as provided below.

(ii) A title commitment issued by Lawyers Title Insurance Corporation (the "Title Insurer") addressed to Buyer for an ALTA Form B Owner's Title Insurance Policy in the amount of $1,400,000 covering Seller's fee estate in the Real Property dated on or after the date of this agreement showing marketable title in the Seller subject only to the Permitted Exceptions and the Printed Exceptions customarily contained in the Title Insurer's commitments for such form of Owner's Title Insurance. By way of extended coverage or special endorsement, said title commitment shall insure against

(A) all taxes and assessments other than general real estate taxes for the current year not yet due;

(B) restrictive covenants;

(C) any discrepancies or conflicts in boundary lines; and

(D) any questions of possession.

(c) If the title commitment discloses exceptions other than the Permitted Exceptions ("Unauthorized Exceptions") or if the survey discloses matters not conforming to the re- quirements of (b)(i) above, or any condition that renders title to the Real Property unmarketable ("Survey De-fects"), and Seller shall fail to have the Unauthorized Exceptions removed from the title commitment or to correct the Survey Defects prior to the Closing Date Buyer may, in addition to any other remedies

it may have hereunder, terminate this agreement as provided in paragraph 9.2 or upon notice to Seller no less than five business days prior to the Closing Date, elect to take title to the Real Property as it then is with the right to deduct from the purchase price and to hold back from the cash payable at the Closing an amount equal to such Unauthorized Exceptions or Survey Defects as may be discharged by payment of a definite amount. To the extent that the Unauthorized Exceptions or Survey Defects are removed or settled to Buyer's satisfaction any excess of the withheld amount over the amount required to accomplish such removal or settlement shall be remitted to Seller and any deficiency shall be repaid by Seller to Buyer.

7. Covenants.

7.1. Seller covenants and agrees that it will not, between the date hereof and the Closing Date, except with the prior written consent of Buyer:

(a) Change materially or adversely the general character of the Plants or their operations.

(b) Enter into, engage in, or become a party to, directly or indirectly, any transaction with respect to the Plants other than in the ordinary course of business.

(c) Perform or omit to perform any act, which act or omission would cause any of Seller's warranties and representations in this Agreement to be untrue if made as of the Closing Date.

7.2. Seller covenants and agrees that it will between the date hereof and the Closing Date:

(a) Give to Buyer and its representatives full access to all of the properties, contracts and records relevant to the Plants and furnish to Buyer and its said representatives such information relative to the Plants and their operations as they shall at any time, or from time to time, reasonably request.

(b) Maintain the Plants in good repair, order and condition, and maintain and keep in force its existing insurance on all of the Assets and with respect to the Plants and the operation thereof.

(c) Operate the Plants in the ordinary course and, without limiting the generality of the forgoing, use its best efforts to

(i) maintain the relationships of the Plants with their customers, suppliers, brokers, sales representatives, and such other persons or firms as Seller has contact with in connection with the operation of the Plants;

(ii) keep available the services of its present employees and agents and preserve the good will and value of the Plants;

(iii) duly observe and conform to all requirements under any law or regulation applicable to the operation of the Plants or the Assets; and

(iv) except as requested by Buyer, maintain replacement parts, fuel and other consumable supplies at customary levels.

(d) Maintain its books and records in the usual, regular and ordinary manner on a basis consistent with prior years.

(e) Take such actions as Buyer reasonably requests and otherwise use its best efforts to cause fulfillment of all of the conditions to which the obligations of the parties hereto are subject.

(f) Pay all sales, use, transfer and similar taxes, fees and charges of whatever nature due to any governmental authority as a result of the transaction which is the subject of this agreement.

(g) intentionally left blank

(h) Cooperate with Buyer in connection with Buyer's negotiation of an agreement with the City of Battle Creek relative to the charge to Buyer for waste water treatment service. Such cooperation shall include, without limitation, waiver by Seller of any provisions in its contract with the City of Battle Creek with respect to waste water treatment service which would prohibit grant by the City of Battle Creek to Buyer of terms more favorable than those included in its contract with Seller relative

to waste water treatment service for Seller's remaining plants in Battle Creek, provided that such waiver shall extend for no longer than two years from the Closing Date.

(i) Remove at its own expense the fuel oil at the Plants referred to in paragraph 1.2(e).

(j) Cooperate with Buyer in connection with Buyer's efforts to secure confirmation from the Michigan Employment Security Commission that Buyer is a "new employer" for purposes of unemployment compensation insurance.

(k) Pay to all of its employees at the Plants vacation pay equivalent to vacations earned and accrued by such employees on a pro rata basis but not taken prior to the Closing Date.

7.3. Seller covenants and agrees that it will subsequent to the Closing:

(a) Continue to cooperate with Buyer in connection with the matter referred to at paragraph 7.2(j); and

(b) Continue to give Buyer access to any records which it reasonably believes may relate to the Plants, all in the manner provided in paragraph 7.2(a).

(c) Pay to Buyer promptly after written notice one-half of any expenses incurred and paid by Buyer for the following:

(i) Repair of various defects in the multiple roofs over the Plants provided that Seller's total liability under this subparagraph (i) shall not exceed $70,000; and

(ii) Replacement of the first row of blades on the turbine included in the Assets provided that Seller's total liability under this subparagraph (ii) shall not exceed $60,000,

provided that in connection with subparagraph (i) Buyer enters into a contract for the subject roof repairs within 180 days after the Closing Date and in connection with subparagraph (ii) the subject replacement blades have been ordered within 180 days after the Closing Date.

7.4. Buyer covenants and agrees that it will not, between the date hereof and the Closing Date, perform or omit to perform any act, which act or omission would cause any of Buyer's warranties and representations in this Agreement to be untrue if made as of the Closing Date.

7.5. Buyer covenants and agrees that it will:

(a) Maintain all such books, contracts and records relevant to the Plants as are delivered to Buyer by Seller in connection with the transaction which is the subject of this agreement and keep them available for inspection by Seller and its designated representative at all reasonable times and on reasonable prior notice. Buyer shall not destroy any of such records for a period of 60 months after the Closing Date without the prior written consent of Seller. If for any reason the transaction which is the subject of this agreement is not consummated, Buyer shall promptly return to Seller all of the records, documents and information delivered to it by Seller in connection herewith.

(b) Take such actions as Seller reasonably requests and otherwise use its best efforts to cause fulfillment of all of the conditions to which the obligations of the parties hereto are subject.

8. Survival of Warranties.

All representations, warranties, indemnifications, covenants and agreements of the parties hereto contained in or arising out of this agreement or otherwise in connection herewith shall survive the closing hereunder and shall continue in full force and effect thereafter until any claim thereon would be barred by applicable statutes of limitations.

9. Conditions Precedent to Obligations of Buyer.

9.1. All obligations of Buyer under this agreement with respect to the Closing are subject to the fulfillment of each of the following conditions:

(a) Each and every representation and warranty of Seller contained in this agreement shall be true in all respects at the Closing.

(b) Seller shall have performed and complied with all covenants and conditions required by this agreement to be performed or complied with by it prior to or at the Closing.

(c) Intentionally omitted.

(d) Buyer shall have been furnished with an opinion of John J. McLean, General Counsel, Senior Vice President and Secretary for Seller, dated as of the Closing Date, to the effect that:

(i) The corporate existence, due organization and good standing of Seller is as represented and warranted in Paragraph 3.1(a) hereof.

(ii) Seller has full right, power and authority to enter into and perform its obligations under this agreement and all corporate proceedings necessary to be taken by Seller in connection with the authorization of this agreement and the consummation of the transactions which are the subject hereof have been duly and validly taken and this agreement and all other instruments delivered by or on behalf of Seller pursuant hereto have been validly authorized, duly executed and delivered by officers of Seller and constitute valid and binding obligations of Seller.

(iii) Such counsel does not know of or have reason to believe that Seller is a party to any pending suit, action or investigation or inquiry by any governmental body or legal, administrative or arbitration proceedings or any labor dispute relating to or affecting the Assets or the Plants.

(iv) Seller is not subject to any court decree or any statute or regulation requiring it to obtain theconsent or approval of any federal, state or local government or governmental body or authority for the consummation of the transaction contemplated hereby.

(v) The instruments of conveyance delivered to Buyer at the Closing have been duly and properly executed and delivered and Seller has taken all actions necessary to vest in Buyer full and complete right, title and interest in and to all of the Assets.

(vi) No facts or circumstances have come to the attention of such counsel by reason of which they believe that any of the warranties or representations on the part of Seller hereunder are untrue, it being understood that such counsel shall not have made any independent investigation in such regard and are not obligated to do so.

In giving their opinion, counsel shall be entitled to rely on certificates of officers of Seller, public officials or such other persons or opinions of such other counsel (which other counsel shall be identified by name) which such counsel shall reasonably consider to be an appropriate and reliable source of information on which counsel's opinion is based, which sources shall be specified in such opinion.

(e) No portion of the Assets exceeding $100,000 in value shall have been stolen, lost, materially damaged, or destroyed whether or not any such occurrence may have been insured against; provided that in the event of such theft, loss, damage or destruction, if Buyer shall elect to waive this condition as provided in Paragraph 9.2 and proceed with the Closing, Buyer shall be entitled to receive the proceeds of any insurance paid or payable by reason of such loss or damage or awards recovered or recoverable on account thereof and Seller shall execute and deliver to Buyer from time to time as requested such other documents, instruments and writings as Buyer may request to perfect its interest in and to collect such proceeds or awards.

(f) No suit or action by any party nor any investigation, inquiry or proceeding by any governmental authority nor any legal or administrative proceeding shall have been instituted or threatened on or before the Closing Date which:

(i) questions the validity or legality of the transaction contemplated hereby or

(ii) seeks to enjoin the transaction contemplated hereby or

(iii) seeks material damages on account of the consummation of the transaction contemplated hereby.

(g) Any changes occurring prior to the Closing Date, as specified in notices given Buyer pursuant to Paragraph 3.2, shall have been approved by Buyer in writing.

(h) No change shall have occurred or been announced or proposed after the date hereof prior to the Closing Date in the laws, rules, regulations or policies of any governmental authority in any jurisdiction in which any of the Assets are located or in which the Plants are operated or to which any of the Assets or the Plants are subject, and no change of the kind referred to in paragraph 3.1(j)(vii) shall have occurred which might reasonably be expected to materially and adversely affect the Assets or the Plants.

(i) All consents, permissions and approvals to the transactions which are the subject of this agreement from governmental agencies or otherwise which are reasonably required by Buyer for the consummation of the transactions provided for herein and for the continued operation of the Plants by Buyer after the Closing Date in substantially the same manner as the Plants have previously been operated shall have been received by Buyer on or before the Closing Date in form and content reasonably satisfactory to Buyer and its counsel.

(j) Buyer shall have received a written commitment satisfactory to it from each of the labor unions which are parties to the collective bargaining agreements referred to in Schedule 3.1(g) agreeing to enter into Collective bargaining agreements with Buyer with respect to the Plants, effective on the Closing Date on terms and conditions which are acceptable to Buyer in its sole discretion.

9.2 In the event that any of the conditions set forth in Paragraph 9.1 have not been fulfilled as of the Closing Date, Buyer, may, at its option, by written notice to Seller render its obligations hereunder null and void, and thereupon this Agreement shall be of no further force or effect whatsoever, except that the foregoing shall not be deemed to affect in any way any right of action which either party shall have against the other for breach of any representation, warranty or covenant hereunder. By proceeding with the Closing, Buyer shall be conclusively deemed to have accepted or waived fulfillment of all said conditions, subject to the same exceptions as stated in the preceding sentence.

10. Conditions Precedent to Obligations of Seller.

10.1 All of the obligations of Seller hereunder are subject to the fulfillment of each of the following conditions:

(a) Each and every representation and warranty of Buyer contained in this agreement shall be true in all respects at the Closing.

(b) Buyer shall have performed or complied with all covenants and conditions required by this agreement to be performed or complied with by it prior to or at Closing.

(c) Intentionally omitted.

(d) Seller shall have been furnished with an opinion of Katten, Muchin, Zavis, Pearl & Galler, counsel for Buyer as of the date of closing to the effect that:

(i) The corporate existence due organization and good standing of Buyer are as warranted and represented in Paragraph 4.1(a) hereof.

(ii) Buyer has full right, power and authority to enter into and perform its obligations under this agreement and all corporate proceedings necessary to be taken by Seller in connection with the authorization of this agreement and the consummation of transactions which are the subject hereof have been duly and validly taken and this agreement and all other instruments delivered by or on behalf of Buyer pursuant hereto have been validly authorized, duly executed and delivered by officers of Buyer and constitute valid and binding obligations of Buyer.

(iii) No facts or circumstances have come to the attention of such counsel by reason of which they believe that any of the warranties or representations on the part of Buyer hereunder are untrue, it being understood that such counsel shall not have made any independent investigation in such regard and are not obligated to do so.

In giving their opinion, counsel shall be entitled to rely on certificates of officers of Buyer, public officials or such other persons or opinions of such other counsel (which other counsel shall be identified by name) which counsel shall reasonably consider to be an appropriate and reliable source of information on which counsel's opinion is based, which sources shall be specified in such opinion.

(e) Any changes occurring prior to the Closing Date as specified in notices given Seller pursuant to paragraph 4.2 shall have been approved by Seller in writing.

10.2. In the event that any of the conditions set forth in Paragraph 10.1 have not been fulfilled as of the Closing Date, Seller may at its option, by written notice to Buyer, render its obligations hereunder null and void and thereupon

this agreement shall be of no further force and effect whatsoever, except that the foregoing shall not be deemed to affect in any way any right of action which either party shall have against the other for breach of its representations, warranties or covenants hereunder. By proceeding with the Closing, Seller shall be conclusively deemed to have accepted or waived fulfillment of all of said conditions, subject to the same exceptions as stated in the preceding sentence.

11. Non-Competition.

11.1. In further consideration of Buyer's obligations here-under, Seller agrees that neither it nor any of its affiliates will for a period of two (2) years after the Closing Date, directly or indirectly:

(a) sell to any party who has purchased products of the folding carton plant at any time during the one year period ending on the Closing Date or any of its affiliates any products of a kind produced or sold by the folding carton plant on the Closing Date or at any time during the one year period ending on the Closing Date except that the foregoing shall not apply to single service cartons to be sold to the Quaker Oats Company; or

(b) sell to General Foods Corporation or any of its affiliates any chipboard or any other box board of a kind which may be used for the same end-use applications as, or as a substitute for, chipboard.

For purposes of subparagraph (a) of this paragraph 11.1, a party will be deemed to have been a customer of the folding carton plant on the Closing Date if it purchased merchandise from the folding carton plant at any time during the one year period ending on the Closing Date.

11.2. The term "affiliate" as used in Paragraph 11.1 means any person or firm which directly or indirectly, through one or more intermediaries, controls or is controlled by, or is under common control with, a customer of the folding carton plant, Seller or General Foods Corporation, as the case may be.

11.3. If any court of competent jurisdiction shall at any time deem the aforesaid time period unreasonably lengthy, or the aforesaid territory unreasonably extensive, the other

provisions of this Paragraph 11 shall nevertheless stand, and the restrictive time period shall be deemed to be the longest period permissible by law, and the restrictive territory shall be deemed to comprise the largest territory permissible by law under the circumstances.

12. Indemnification.

12.1 Seller agrees to indemnify and save Buyer forever harmless from and against any and all liabilities, demands, claims, actions, or causes of action, assessments, losses, costs, damages or expenses, including reasonable attorneys' fees, sustained or incurred by the Buyer resulting from or arising out of or by virtue of:

(a) Any false representation or warranty made herein by Seller or non-compliance with or breach by Seller of any of the covenants of this agreement to be performed by Seller;

(b) Any and all liabilities incurred in or arising out of or in connection with the operation of the Plants on or prior to the Closing Date, including, without limiting the generality of the foregoing, claims for taxes of all kinds, wages, salaries, and other employee benefits, rents workers compensation claims, unemployment compensation claims, claims for severance pay or other benefits arising out of layoff or termination of employees of Seller and any other operating or non-operating expenses or liabilities.

(c) Any claim for payment of fees and/or expenses as a broker or finder in connection with the origin, negotiation, execution, or consummation of this Agreement based upon any alleged agreement between the claimant and Seller.

(d) Intentionally omitted.

(e) Severance pay (which shall be deemed to include termination benefits of any kind) due any three employees of Buyer designated at any time by Buyer by written notice to Seller formerly employed by Seller if they are terminated while employed by Buyer regardless of when such termination occurs.

(f) The maintenance by the Seller on or prior to the Closing Date of any employee benefit plan (as defined in ERISA), multiemployer plan (as defined in ERISA), employment contract, corporate policy, consulting agreement, collective bargaining agreement or any other employee benefit or employment agreement or commitment, written or

oral, (collectively referred to herein as the "Plans"), including by way of example, but not limitation:

(i) any partial or total withdrawal liability, as defined in Section 4201 of ERISA, being claimed or asserted against Buyer;

(ii) any claim of any Plan for employer contributions;

(iii) any claims by employees (or former employees) of Seller or Buyer for benefits or employment rights based partially or totally upon the existence of a Plan, except Assumed Liabilities and claims with respect to which Buyer is obligated pursuant to Section 12.2(e);

(iv) any claims by employees of Buyer to Plans, arrangements, agreements or commitments comparable to any Plan based upon the representations of employees or agents of Seller;

(v) any claims or assessments of taxes or penalties for failure to comply with any requirement of ERISA or the Internal Revenue Code; and

(vi) any claim that Buyer is a fiduciary with respect to such Plans and has breached a duty to such Plans.

12.2. Buyer hereby agrees to indemnify and save Seller forever harmless from and against any and all liabilities, claims, demands, actions or causes of action, assessments, losses, costs, damages or expenses, including reasonable attorneys' fees sustained or incurred by Seller resulting from or arising out of or by virtue of:

(a) Any false representation or warranty made herein by Buyer or non-compliance with or breach by Buyer of any of the covenants of this agreement to be performed by Buyer.

(b) Any liabilities incurred in or arising out of or in connection with the conduct of the Business by Buyer from and after the Closing Date.

(c) Breach by Buyer of any obligation arising out of the Assumed Liabilities.

(d) Any claim for payment of fees and/or expenses as a broker or finder in connection with the origin, negotiation, execution or consummation of this Agreement based upon any alleged agreement between the claimant and Buyer

(e) Any claims by employees of Buyer formerly employed by Seller for severance pay under any plans or policies instituted by Buyer if they are terminated while employed by Buyer.

12.3. In the event that subsequent to the Closing Date any claim is asserted against a party hereto as to which such party is entitled to indemnification hereunder, (except as set forth in paragraph 12.5 with respect to claims arising under subparagraph (d) and (e), rspectively, of paragraph 12.1) such party (the"indemnified party") shall within ten (10) days after learning of such claim notify the party obligated to indemnify it (the "indemnifying party") thereof in writing by registered or certified mail, return receipt requested. In the event the indemnified party shall fail to give notice of such claim as aforesaid, the indemnifying party shall have no obligation to indemnify the indemnified party with respect to such claim. The indemnifying party shall have the right, upon written notice to the indemnified party within ten (10) days after receipt from the indemnified party of notice of such claim, to conduct at its expense the defense against such claim in its own name, or if necessary in the name of the indemnified party. In the event that the indemnifying party shall fail to give such notice, it shall be deemed to have elected not to conduct the defense of the subject claim, and in such event the indemnified party shall have the right to conduct such defense and to compromise and settle the claim without prior consent of the indemnifying party. In the event that the indemnifying party does elect to conduct the defense of the subject claim, the indemnified party will cooperate with and make available to the indemnifying party such assistance and materials as may be reasonably requested by it, all at the expense of the indemnifying party, and the indemnified party shall have the right at its expense to participate in the defense, provided that the indemnified party shall have the right to compromise and settle the claim only with the

prior written consent of the indemnifying party. Any judgment entered or settlement agreed upon in the manner provided herein shall be binding upon the indemnifying party, and shall conclusively be deemed to be an obligation with respect to which the indemnified party is entitled to indemnification hereunder.

12.4. Intentionally omitted.

12.5. In the event that Buyer incurs any expenses which are within the scope of the indemnification included in paragraph 12.1(e) hereof, Buyer shall promptly notify Seller in writing of such expense which notification shall include the name of the contractor or supplier as the case may be and photocopies of purchase orders or other documentation which Buyer may have in connection with the subject repair or replcaement. Any amount which shall be due Buyer pursuant to

the indemnification included in said paragraph 12.1(e) shall be applied against the amounts next due Seller under the promissory note referred to in paragraph 2.3(b) hereof.

13. Accounts Receivable.

13.1. Any payment intended for Seller received by Buyer within thirty (30) days after the Closing Date shall be promptly paid over to Seller in the form received. Any such payment received between the 31st and 60th day after the Closing Date shall be paid over to Seller within one week of Buyer's receipt thereof. Any such payment received by Buyer thereafter shall be paid over to Seller within thirty (30) days of Buyer's receipt thereof. Payments received from payors indebted to both Seller and Buyer shall be deemed intended for application against the subject obligations in the order in which they were invoiced unless the payor shall have directed that they be applied otherwise.

13.2. Seller shall give Buyer no less than five (5) days prior written notice of any action it intends to take with respect to collection of any account receivable arising out of the operation of the Plants including, without limitation, any demands for payment to be made on the account debtor and any legal proceedings to be instituted. Buyer shall have the option, exercisable by written notice to Seller within such five day period, to purchase any such defaulted account for cash in the amount of 60% of the amount of the subject account receivable.

13.3. Seller acknowledges that Buyer shall have no obligation with respect to any accounts due Seller except as expressly provided herein.

14. Miscellaneous.

14.1. Any notices from Buyer to Seller hereunder shall be deemed sufficiently given upon delivery, refusal by addressee, or notice to Buyer from the Post Office that such notice is undeliverable, if such notice has been mailed by United States registered or certified mail, postage prepaid, addressed to:

Michigan Holding Corp.
c/o Field Container Corp.
1500 Nicholas Blvd.
Elk Grove Village, Illinois 60007
Attention: Lawrence Field

with a copy to:

Allan B. Muchin
Katten, Muchin, Zavis,
Pearl & Galler
55 East Monroe Street, Suite 4100
Chicago, Illinois 60603

or at such other address of addresses as Seller may from time to time specify by notice in writing to Buyer, given in the manner provided in this paragraph. Any notice from Seller to Buyer hereunder shall be deemed sufficiently given upon delivery, refusal by addressee or notice to Seller from the Post Office that such notice is undeliverable if such notice has been mailed by United States registered or certified mail, postage prepaid, adressed to:

John J. McLean
Senior Vice President, General
Counsel and Secretary
St. Regis Corporation
237 Park Avenue
New York, New York 10017

or at such other address or addresses as Buyer may from time to time specify by notice in writing to Seller, given in the manner provided in this paragraph.

14.2. Severability. The unenforceability or invalidity of any provision of this agreement shall not affect the enforceability or validity of any other provision.

14.3. Statements Constitute Warranties. All statements contained in any certificate or other instrument delivered by or on behalf of any party hereto pursuant to this agreement or in connection with the transactions contemplated hereby shall be deemed representations and warranties by such party hereunder.

14.4. Assignment. Neither this agreement nor any rights, representations or warranties hereunder shall be assignable by either party, it being understood that the merger, consolidation or reorganization of either party or transfer to an affiliate of such party shall not be deemed an assignment for purposes hereof.

14.5. Confidentiality. In the event that the transaction which is the subject of this Agreement is not consummated, Buyer agrees that it will return to Seller all records and other documents of Seller then in its possession and will not itself use, or disclose, directly or indirectly, to any person any Business Information with respect to Seller or the Business learned by Buyer during the period between the date hereof and termination of this agreement. The term "Business Information" as used herein means all information of a business or technical nature relevant to Seller or the Business which is not generally known in the paper box or paper board industry.

14.6. Entire Agreement. This agreement sets forth the entire understanding of the parties and may be modified only by instruments signed by both of the parties hereto.

14.7. Documents. Each party will execute all documents and take such other actions as the other party may reasonably request in order to consummate the transactions provided for herein and to accomplish the purposes of this agreement.

14.8. Counterparts. This agreement may be executed simultaneously in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

14.9. Third Parties. Nothing in this agreement express or implied is intended to confer any right or remedy under or by reason of this agreement on any person other than the parties hereto their respective heirs, representatives, successors and assigns nor is anything set forth herein intended to affect or discharge the obligation or liability of any third persons to any party to this agreement nor shall any provision give any third party any right of subrogation or action over against any party to this agreement.

14.10. Expenses. Each of the parties shall pay all costs and expenses incurred or to be incurred by it in negotiating and preparing this agreement and in closing and carrying out the transactions contemplated by this agreement.

14.11. Governing Law. This agreement shall be construed and governed in accordance with the laws of the State of Michigan.

14.12 Headings. The subject headings of paragraphs and subparagraphs of this agreement are included for purposes of convenience only and shall not affect the construction or interpretation of any of its provisions.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

Attest:

ASSISTANT SECRETARY

St. Regis Corporation

By: Edward J. McMahon
President and Chief
Operating Officer

Attest:

Asst Sec'y

Michigan Holding Corp.

By: Eli Field
Chairman of the Board

ASSET PURCHASE AGREEMENT
BETWEEN
ST. REGIS CORPORATION
AND
MICHIGAN HOLDING CORP.

LIST OF SCHEDULES AND EXHIBITS

Schedule 1.3	--	List of encumbrances with respect to Assets.
Schedule 2.2	--	Allocation of purchase price.
Exhibit 2.3(b)	--	Form of Mortgage Note.
Exhibit 2.3(c)	--	Form of Inventory Note.
Schedule 2.4	--	List of Stock Room Items.
Exhibit 2.4	--	Certificate of Inventory Purchase Price.
Exhibit 2.5(A)	--	Form of Mortgage.
Exhibit 2.5(B)	--	Form of Security Agreement.
Schedule 2.7	--	List of Assumed Liabilities.
Schedule 3.1(e)	--	List of required approvals, consents and permissions.
Schedule 3.1(f)	--	List of patents, trademarks, trade names, etc. used in operation of Plants.
Schedule 3.1(g)	--	List of material contracts.
Schedule 3.1(h)	--	Description of real property.
Schedule 3.1(k)	--	List of names and salaries of employees at Plants.
Schedule 3.1(m)	--	Interest of Seller or affiliates in competitors, suppliers or customers of Plants.
Schedule 3.1(n)	--	List of major items of tangible personal property.
Schedule 3.1(o)	--	List of pending or threatened litigation which may affect the Plants or Assets.
Schedule 3.1(q)	--	List of trade secrets.

Schedule 3.1(s)	--	List of licenses and permits held by Seller relative to the Plants.
Schedule 4.1(b)	--	Governmental regulation violations and governmental approvals, consents or permits required with respect to Buyer in connection with transaction.
Exhibit 6.3(A)	--	Form of Deed.
Exhibit 6.3(B)	--	Form of Lease between Buyer and Conrail.
Exhibit 6.3(C)	--	Form of Quit Claim Deed.
Schedule 6.3	--	Additional Permitted Exceptions.
~~Schedule 9.1(k)~~	~~--~~	~~Identification of boiler and standards with respect thereto~~.
~~Schedule 12.1(f)~~	~~--~~	~~Three "retained employees"~~

Request

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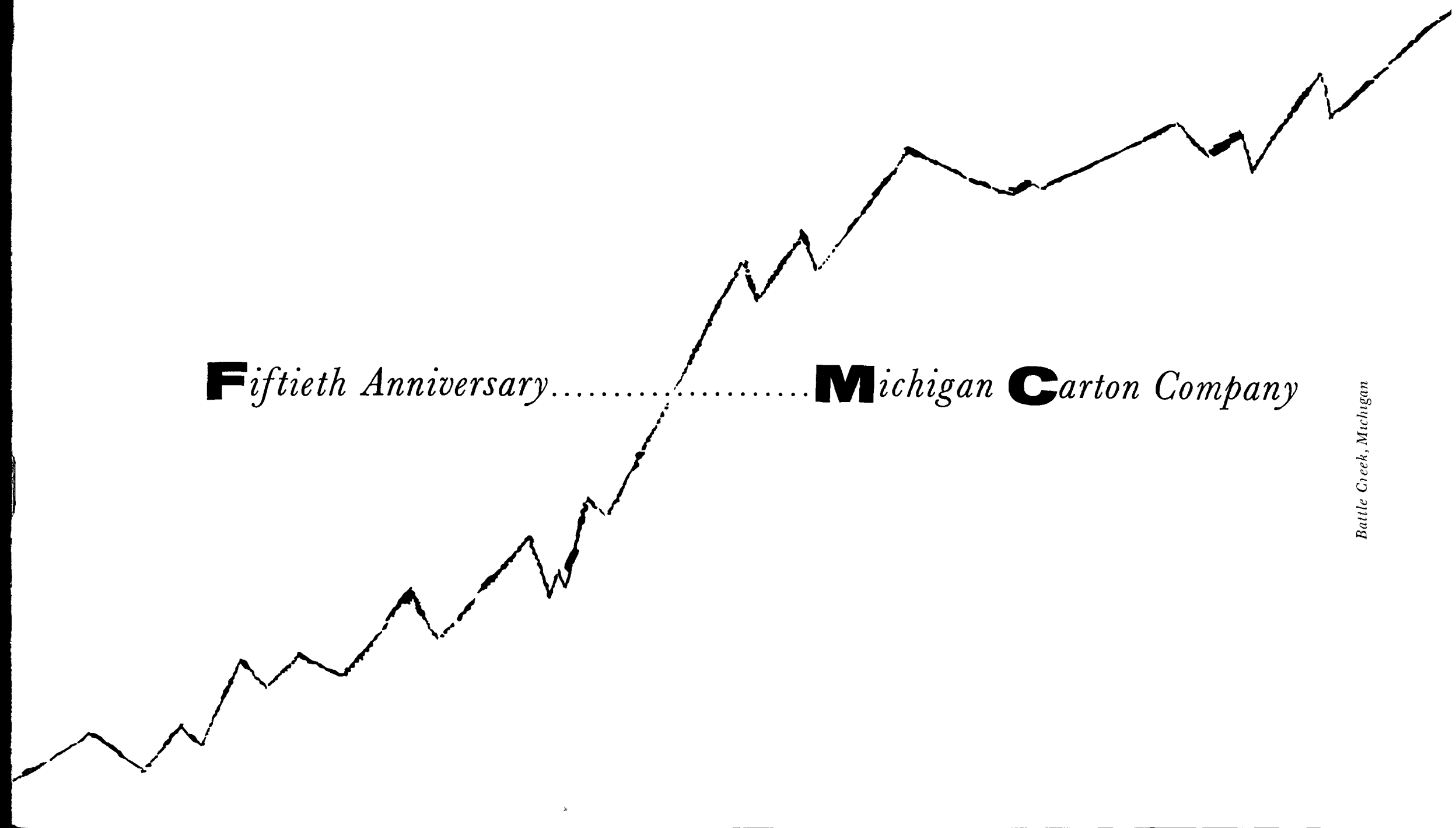
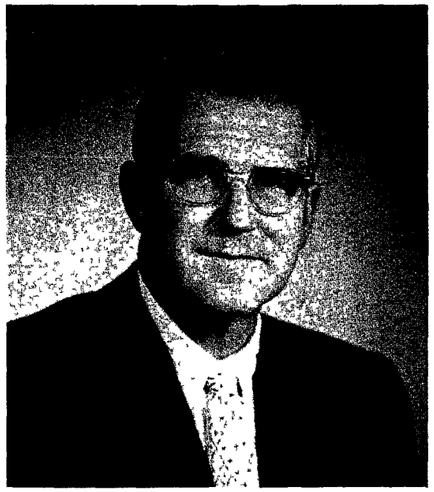


F*iftieth Anniversary*.....**M***ichigan* **C***arton Company*

Battle Creek, Michigan



Foreword

Now that we have reached the 50th birthday in the life of Michigan Carton Co., it seems a fitting time to pause and reflect back on the road we have traveled, to acknowledge those who came before us and to leave some record for those who will surely follow. Accordingly this book has been printed for our employees and friends, as a sort of family portrait and memento of this happy occasion.

J G Fell

A *forecast of things to come*

The folding carton was not born in Battle Creek, but it spent an important part of its youth here. Michigan Carton entered upon the scene when the infant industry had risen up and begun to walk. The events leading up to the founding of Michigan Carton Co. and the subsequent years of its growth, tell a fascinating story about the evolution of a mass merchandising technique that has become axiomatic today.

Between 1880 and 1900 conditions in America became favorable to the development of a national market. Transportation and communication were sufficiently developed to permit the manufacture, distribution, and sale of products to a whole nation. Mass merchandising was to parallel mass production and the pattern of American industry which we know so well today was in its formative years. For many industries, particularly the food industry, the folding carton became the king pin on which this pattern revolved.

Among the first to recognize the principles of packaging, branding, and advertising to gain mass markets were men in the breakfast cereal business. Much of the early pioneering was done by Quaker Oats and credited to the foresight of Henry P. Crowell, then president of that Company. In the early '70's, rolled oats were sold in barrels. The market was controlled by jobbers who purchased their requirements by competitive bidding from oat millers. Competition was ruinous, manufacturers had little or no control over the market. Crowell conceived the idea that if he packaged and branded his product, the consumers who tried it, and liked it, would come back and ask for it by name. Packaging oats was not original with Crowell but he added some new ingredients to the technique of selling them. He improved his product, identified it, and entered on a national advertising campaign.

In 1890 Crowell organized an all Quaker Train to cross the continent giving out free samples. A second train crossed the nation in 1892 accompanied by wide publicity. Coupons and premiums were introduced. Quaker took over the breakfast oats market and the thing that enabled it to do so was a folding carton, positively identified, tamper proof, and immune to substitution.

The cereal industry arrives in Battle Creek and so does Mr. Fell

About this time a new breakfast cereal industry was born in Battle Creek largely as a result of the efforts of Dr. John Harvey Kellogg and his brother W. K. Kellogg. Dr. Kellogg was head of the Battle Creek Sanitarium, a man of tremendous energy and inventive ideas. He contributed much to the advancement of hydrotherapy, physiotherapy and diettherapy. The Sanitarium grew by leaps and bounds and hundreds of people streamed into Battle Creek for treatment.

The business management of the affairs of Dr. Kellogg as well as the manufacture of the health foods served at the Sanitarium fell largely on the shoulders of his hard working brother, W. K. Kellogg. He spent long hours working over the processes, suggesting ideas for improvement and development of the health foods that were destined to become the ready to eat breakfast foods we know today.

In 1891 one of the patients at the Battle Creek Sanitarium was C. W. Post, a man also of inventive mind but suffering from poor health. He stayed for awhile at the Sanitarium but with ideas of his own, he opened a small health resort known as the LaVita Inn. This was not a success, so early in 1895 he embarked upon a commercial venture to sell health foods. His first product was a cereal coffee substitute much like a similar beverage he had been served at the Sanitarium. At first he called the Product "Monk's Brew" and it did not sell, but when he changed the name to Postum Cereal and advertised it as a health beverage, the product caught on.

It is impossible to tell whether Post consciously copied the merchandising methods of Quaker Oats or not, but he did follow the identical pattern of packaging, branding, and vigorously advertising his product.

In 1898 Post added a second product to his line, Grape Nuts. It too was widely advertised as a health food. Post's success was indeed phenomenal, by 1900 he was a millionaire with a huge factory and a national market for his products. Needless to say this success was noted by many people and a cereal boom was touched off in Battle Creek that approached hysteria. Between 1902 and 1904 it received nation wide publicity with many cartoons and jibes depicting the scene at Battle Creek. This was the Battle Creek that W. I. Fell, founder of Michigan Carton Co., saw when he arrived here in 1898.

Mr. Fell was neither cereal expert nor carton engineer, yet he became involved in both enterprises through his ability as a man of business and finance. Born Jan. 1, 1861, on a farm near Belleville, Michigan, he attended school there, graduating from Belleville High School. He next took a course at the Detroit Business College and upon finishing, obtained employment with J. F. Sanders, Ypsilanti's leading clothier. After 5 years with Sanders, Mr. Fell went in business for himself with a man by the name of G. W. Densmore operating the clothing firm of Densmore and Fell in Ypsilanti. It was during these years that Mr. Fell married Miss Frances Gibson of Ypsilanti and their only child Lawrence G. Fell was born, June 19, 1897. In 1898 Mr. Fell sold his interest to Densmore and moved to Battle Creek, opening a clothing firm with a Mr. W. F. Fischer. This association lasted 3 years bringing us up to 1902 when the cereal boom burst forth on Battle Creek.

Mr. Fell founds a cereal company but Mr. Kellogg changed his plan...

In 1902 Mr. Fell with other men in Battle Creek, organized the Hygienic Food Company for the manufacture of Maple Flakes. Mr. Fell was elected treasurer and member of the managing board. The product was marketed with considerable success, following the familiar pattern of packaging and advertising. He remained with the company through 1906 and then resigned to found the Michigan Carton Company. Maple Flake Mills, as the company was later renamed, was one of the few to survive the initial boom for any length of time. It continued operations until after World War I, when through a succession of sales, it became the property of the Ralston Purina Company. The old Maple Flake Mill was considerably expanded and today is the home of Wheat Chex and Rice Chex.

The story of the founding of the Kellogg Company has already been told by Porter in his book, "None Genuine Without This Signature," but the part regarding W. K. Kellogg's early interest in Michigan Carton Company was not mentioned. For a number of years W. K. Kellogg managed the Sanitas Food Company for his brother Dr. John Harvey Kellogg. This company manufactured the products these men had invented and sold them to the Sanitarium and by mail to former patients of that institution. W. K. Kellogg wanted to expand operations and adopt the advertising techniques of the successful imitators who had copied many of their original ideas. His brother took a dim view of this, and many of his staff doctors at the Sanitarium complained that the business exploitation of cereals and other health food products was incompatible with the ethics of medicine. W. K. Kellogg finally persuaded his brother to sell him the rights to manufacture Corn Flakes and sell them nationally. In 1906 he set up his own company and immediately launched a strong advertising campaign. From the very beginning, Corn Flakes were popular with the public.

W. K. Kellogg was not a rich man. In setting up his new company he was able to retain less than ⅓ of the stock. In addition, he had incurred heavy indebtedness to rebuild after fire had destroyed his original factory.

Unlike C. W. Post, who had built his own carton and container division, Mr. Kellogg depended on an outside source of supply for cartons.

Early in 1907 W. K. Kellogg approached W. I. Fell with the idea of buying up the Record Publishing and Carton Company, the only independent carton manufacturer in Battle Creek. Why he selected Mr. Fell is not known, but it may have been because of his successful background in the cereal business, or his respect for him as a business man and entrepreneur. At any rate on April 4, 1907 the local newspapers carried the announcement that W. I. Fell had purchased the properties of a defunct iron foundry on South Jefferson Avenue. Although the purpose of the purchase was not disclosed, it was the new home of Michigan Carton Co.

...and Michigan Carton Company is born

This old picture is the staff of the Record, most of whom came with Michigan Carton. Jack Byrne can be seen seated with hat in hand. Walter Sooy is in the third row above Mr. Byrne slightly to the right.

The machinery of the Record Publishing and Carton Company was acquired and moved into the new property. The Michigan Carton Co. was incorporated April 17, 1907, and its first President was W. K. Kellogg, while W. I. Fell was made Secretary-Treasurer. Mr. Kellogg took no active part in the management of the company and held his office for only one year. He held a sizable financial interest in the company, however, until 1921 when he sold his holdings to W. I. Fell and his son Lawrence G. Fell.

Since the organizers of Michigan Carton were not experienced in the manufacture of cartons, they secured the services of John F. Byrne to act as superintendent of the plant. Mr. Byrne had learned his trade in an eastern carton firm and originally came to Battle Creek to work for C. W. Post when his carton division was established. Mr. Byrne was hired even before manufacturing was begun and he supervised the moving of equipment from the Record Publishing & Carton Company into the property of Michigan Carton Company. The following year he was elected Vice President in charge of manufacture and remained an officer in the company until 1919 when he resigned. Mr. Byrne's experience was an invaluable aid to Michigan Carton in its early years, particularly in cutting and creasing work. If not the first he was one of the first to change over from metal to wood furniture in locking up cutting forms. Wood is easier to work, more flexible to use and much lighter. The lighter forms caused less wear on the press and permitted faster speeds.

Press room foreman under Mr. Byrne was Walter E. Sooy. Mr. Sooy came with Michigan Carton from the Record Publishing and Carton Company where he had received his training. He was an aggressive and forward looking man who kept Michigan Carton abreast of new developments to improve manufacturing processes. As a result Michigan Carton was among the first to install humidification in the press room to control paper shrinkage for better register, adopt moisture set ink and install Pasche Sprays to prevent offsetting. He became an officer of the company first in 1919 and again in 1927 to 1931 when he resigned.

Mr. Post suggests a paperboard mill

View of the original No. 1 and No. 2 paperboard machines in the Fountain Street Mill, around 1918.

Late in 1909 C. W. Post summoned W. I. Fell to his office to discuss the possibility of building a paperboard mill. Up to this time there was no local source for paperboard and supplies had to be shipped in for both Michigan Carton and the Postum Cereal Company. Post manufactured his own cartons and pointed out the advantage to both companies in having a local mill. He assured Mr. Fell that he would provide a substantial market for the board if Mr. Fell would build the mill. In 1911 Michigan Carton constructed its first mill and installed a 40-ton paperboard machine. The capacity of this machine was soon over subscribed so in 1912 a second 40-ton machine was erected in the Fountain Street Mill It was in this year that W. I. Fell who had been serving as Secretary-Treasurer became President of Michigan Carton Company.

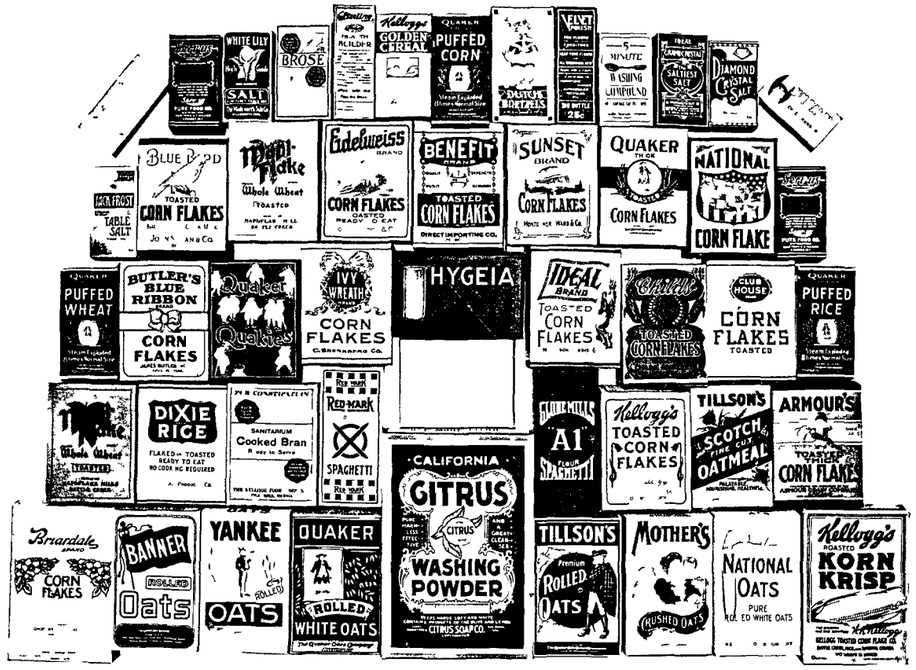
During the intervening years from 1908 to 1914 the office of President was held by Mr. H. L. Kneeland and Mr. Wm. H. Mason, both stockholders and members of the Board. Both men were influential in the building of the board mill and erection of the two paperboard machines. Mr. Mason died in office, however, Mr. Kneeland continued to serve on the Board for many years, the majority of these as Vice President, until his death at the end of 1936.

Early cartons

Early cartons were quite different from today's. They were much more cubical in shape and rather simply printed by today's standards. Nevertheless the cereal manufacturers were well aware of the recognition value of the carton. An important part of Michigan Carton's business was done on jumbos. These giant cartons measuring two to three feet in height were extensively used for "window displays" and a very common sight in the corner grocery window. Another important segment of business was done on sample cartons. These small containers were produced by the millions for the cereal factories who, by this time, were assaulting the national market in all sections of the country.

The effect of the cereal industry on educating the public to buy its groceries in cartons cannot be underestimated. By 1910 their advertising budgets had reached the million dollar a year mark and earned for Battle Creek the reputation of being the best advertised city of its size in the world. These ads were pointing up one of the primary functions of a good package in keeping the product away from contaminating factors.

For many years the slogan "Not touched by human hands" appeared in Post advertising. The effect on the public can be appreciated for there were many sticky fly paper ribbons hanging from grocers' ceilings.



Parade float showing Michigan Carton's products. This old postcard photo was probably taken prior to 1910.

In 1919 John Byrne resigned leaving a vacancy for the office of Treasurer in the Company. It was filled by Lawrence G. Fell, son of W. I. Fell. Young Mr. Fell had joined the company after the close of World War I and had been occupied for the most part with purchasing work. Michigan Carton began to seek business from other industries beside breakfast foods. In those days the breakfast food business on ready-to-eat cereals was practically a summer affair. Diversification of customers was clearly needed for more balanced production.

From the very beginning, Michigan Carton has been a successful financial venture. At the end of the first year a dividend was declared and Michigan Carton has never failed to pay a dividend. Although production from 1907 to

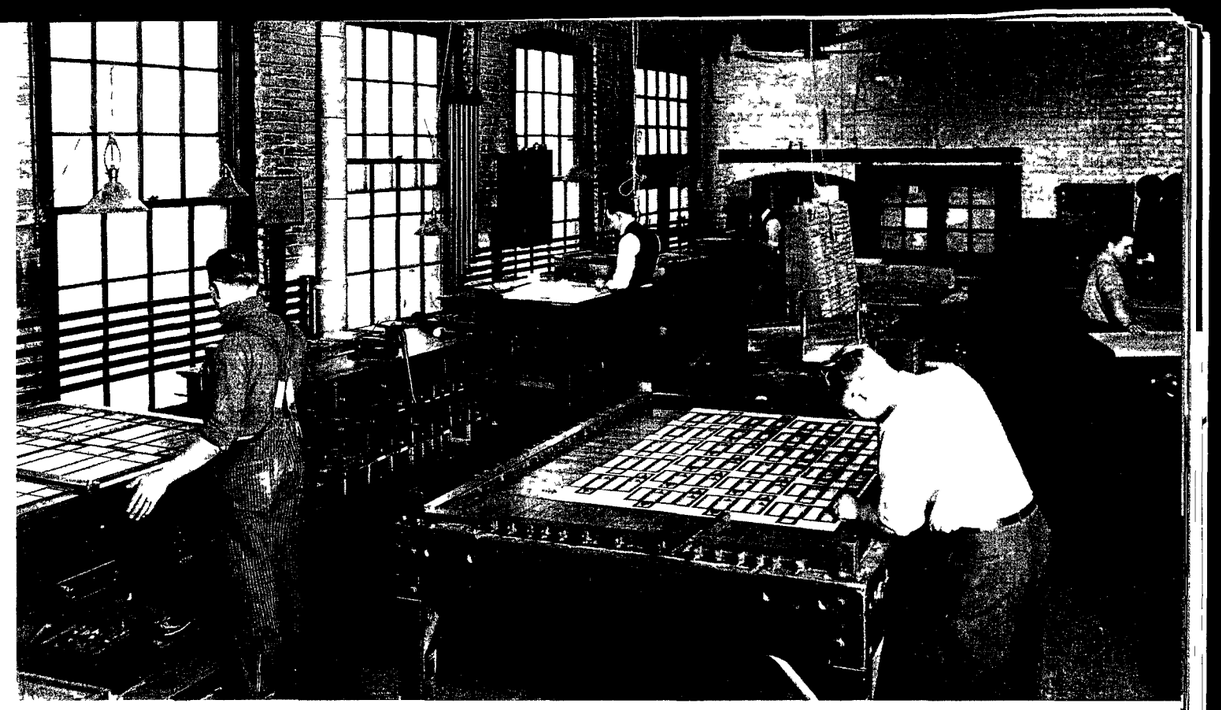
A second Mr. Fell joins the firm...and the company...

1919 was practically 100% cereal cartons, expansion was constant and rapid. To keep up with demand, cutting press capacity had to be increased, additional presses and gluing machines were purchased. By 1920 a 4-story warehouse had been added for raw and finished goods. Capitalization had increased from the original $100,000 to $600,000. Although Post and Kellogg by this time were making the bulk of their own cartons they were customers for paperboard. In addition Michigan Carton was supplying cartons to a large number of other campanies in the breakfast food industry. With the second paperboard machine in operation more storage space was needed. Two additions were built on the properties, one in 1916, and one in 1919.

Photographs of Lawrence Fell, above, and his father, below, were taken about 1919 shortly after Lawrence Fell joined the firm.

Walter Sooy succeeded Mr. Byrne as production head and during the next decade a minor expansion to the carton plant was made, the paperboard machines were rebuilt for larger capacity, and the power plant was modernized. By 1922 the capitalization reached $1 million. In order to increase capacity, larger presses were purchased. These big presses enabled us to print more cartons on a sheet and increase our total output.

The year 1931 was significant for Michigan Carton. W. I. Fell had reached the age where



This picture of Frank Stowitts was taken in 1919 when he was a die maker. Today he is our Senior Vice President.

. . . Grows

retirement was desirable and he resigned as President to become Chairman of the Board. His son Lawrence G. Fell who had worked closely with his father, and who had been very busy building up sales of both cartons and paperboard to effect national distribution, was elected President in his place.

Another officer of the Company, Walter Sooy, who had been with the Company since its founding, also resigned. His position as General Superintendent of the plant was filled by Frank H. Stowitts.

About this time a minor revolution in food retailing took place which was to have a large influence on cartons. The self-serve grocery store was introduced to the public. Now, for the first time, housewives were invited behind the sales counter to make buying decisions without the direct suggestion of any clerk. Even more important, all of the merchandise came out of the back room and from under counters to make an impressive display. Impulse purchases increased greatly. Food packages became taller, wider, and thinner, to increase the visible face of the package. Slowly at first but with increasing acceleration, packages took over the selling functions of the retail store salesman. Attractive color pictures of the product, ready to serve, replaced simple names and designs. Backs of cartons carried suggestions for use, new recipes, and premium offers. Eye appeal, always desirable, was now a necessity if cartons were to perform an efficient selling job. A high degree of perfection in printed cartons as well as improved paperboard was required of the manufacturer.

Some losses and a gain

Jan. 2, 1933, Michigan Carton Co. lost its founder when W. I. Fell passed away. Battle Creek, too, lost a much respected industrialist who had given it two major manufacturing plants.

During the early "Thirties" evidence of growing pains were apparent. The Company was fortunate in securing the services of two men, experienced in sales, who developed much new business for Michigan Carton. The first was Harry J. Byrne who came to us from the East and joined the Company as Eastern Sales Manager. In 1934 he was promoted to General Sales Manager. The other was Dan Int-Hout of Chicago, who was appointed Western Sales Manager and head of the newly installed Chicago office. To keep up with the growing business additional property at the Fountain Street location was purchased and in 1935 and 1936 the carton plant was enlarged.

In 1938 Michigan Carton bought 18 acres of land and 60,000 square feet of buildings from the Rumley Co. who had closed their Battle Creek Threshing Machine Plant. The buildings were put to immediate use for raw stock storage and the remaining acreage consisting of an open field gave us much needed space for future expansion.

By 1939 the two paperboard machines produced a record 202 tons daily production, but the eventual need for more capacity was recognized. World War II interrupted any possibility of immediate building; however, the Company did acquire a small building across the street from the main office on Fountain Street. It was used to house the research and engineering offices and the laboratory. During this time plans for building a second board mill on the Angell Street property were being considered.

At the close of World War II in 1945, ground was broken for the long planned new paperboard mill at the Angell Street property acquired some 8 years before. Since no existing buildings were used, there were no restrictions on the designers and the most modern mill, both as to building layout and machines, was planned. Construction covered the next three years and on June of 1948 operation was begun. The new mill cost over $7.5 million but Michigan Carton increased its paperboard capacity from a little over 200 tons to 400 tons daily.

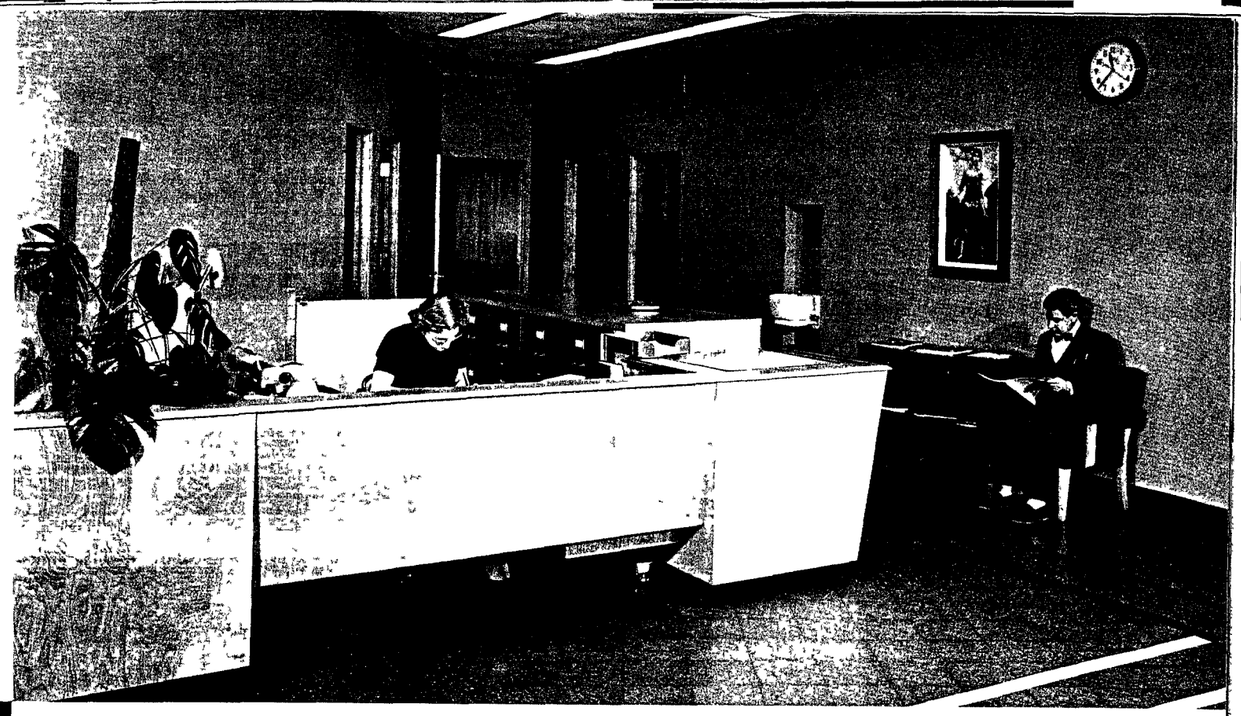
Michigan Carton closed the turbulant "Forties" with the loss of a valued and capable man. Harry Byrne, Vice President and Sales Manager passed away August 28, 1949.

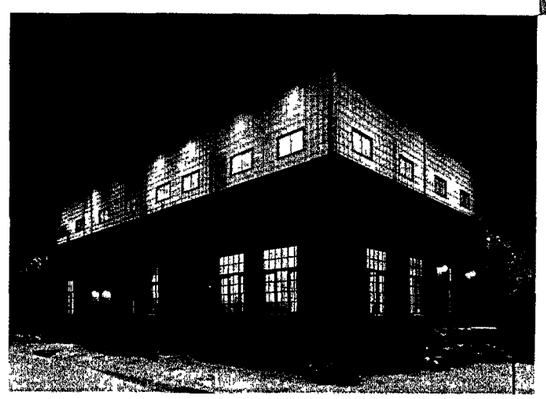
The previous decade was significant not only for Michigan Carton but for the packaging industry as a whole. During this time the Giant Supermarket made its rise and development, further increasing the demand for packaged merchandise. Self service spread to drug and variety stores. With labor costs constantly rising, mechanical handling of prepackaged products became advantageous. The almost universal ownership of family automobiles made it economically feasible to eliminate home delivery costs. The customers preferred to shop and carry home their purchases in their own cars. Mass distribution had made factory packaged consumer sized units mandatory. There was practically no other method of moving goods from producer to consumer.

Midway in the construction of the New Mill which covered the years 1945 to 1948.

Still growing with cartons

At Mid-Century Michigan Carton turned its attention to product development and new markets. The shortage of paperboard was relieved by the new mill production. Adequate supplies of board were available to satisfy demand for both paperboard and folding carton customers, with some capacity left for expansion. To fill the vacancy left by the death of Mr. Byrne, the Board elected Dan Int-Hout, Vice President in charge of Sales.





Remodeled Laboratory building with new second story added.

Inner lobby of the new wing added to the Main Office building in 1952.

The gradual growth and creation of new managerial positions in the Company created an acute shortage of office space so in 1952 a new wing was added to the office building more than doubling the number of offices available.

In 1955 extensive re-organization of departments and expansion of activities in research and development was ordered by the Board. A new position, Assistant to the President, was created and Dan Int-Hout, Jr. was elected to fill it. In addition to relieving the President of routine detail, Mr. Int-Hout is coordinator of the various departments concerned with development work.

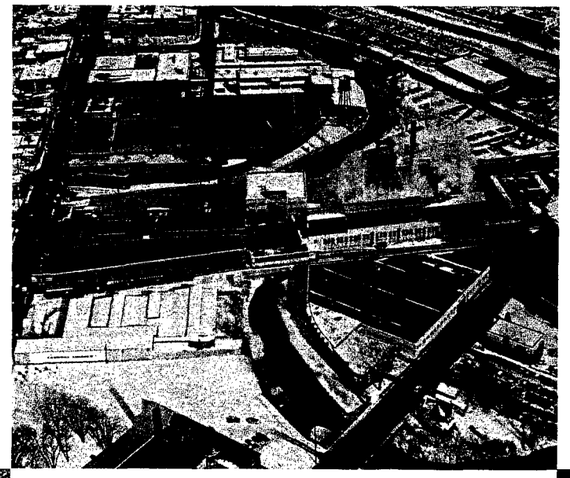
To accommodate these new departments more office space was needed and a second story was added to the Laboratory Building in 1956.

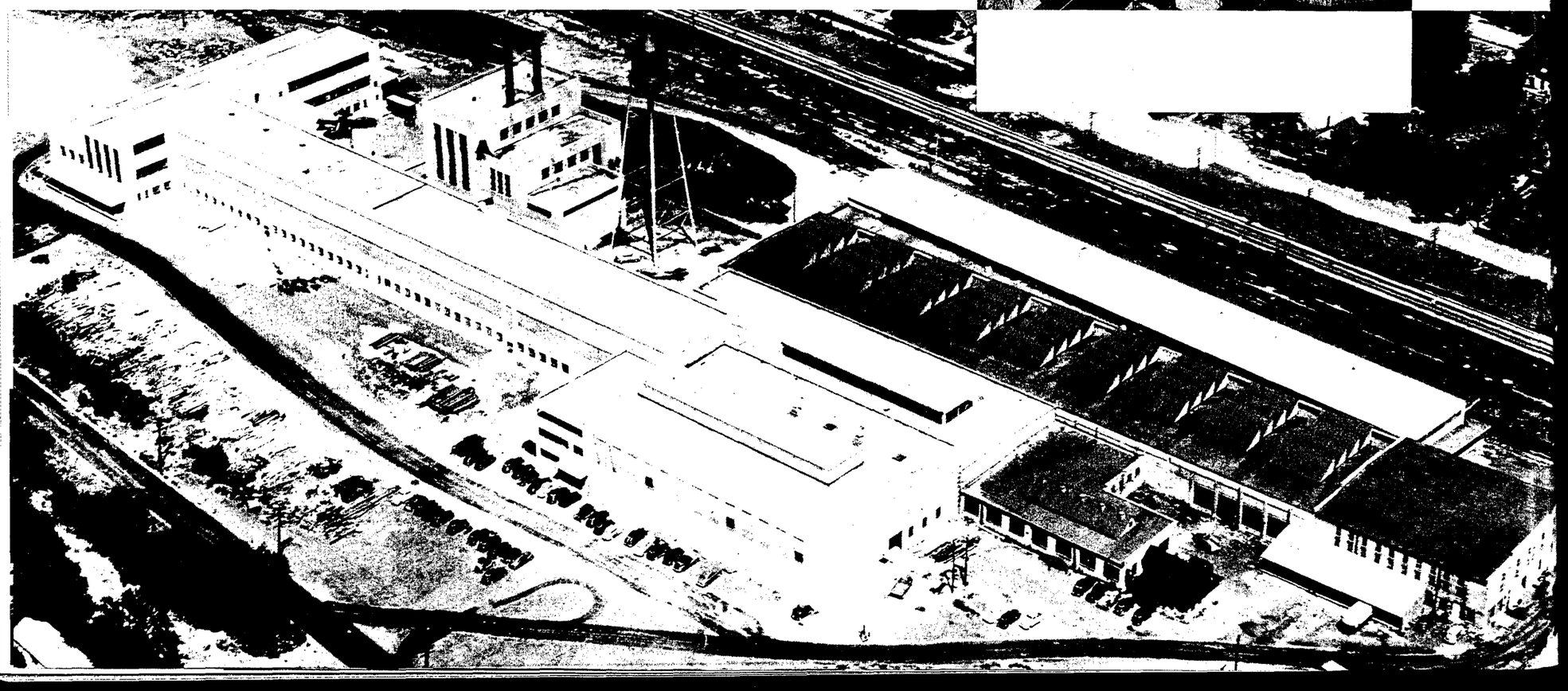
Today Michigan Carton is better organized and better housed than ever before During the past several years an extensive program of modernization had taken place in the plant Automatic feeders and strippers were installed on the cutting presses The No 1 paperboard machine was completely dismantled and rebuilt. The Fountain Street power plant was expanded and all of the equipment replaced with larger and up-to-date machines. New pulpers have been installed Last year Michigan Carton installed its first offset lithography press and a second offset press is being erected now. This program will be a continuing one in order to produce the best product and service for our clients and keep the Company in a healthy competitive position.

Devotion to product together with service to customers has always been more important to Michigan Carton than mere size Yet by placing these things first it has grown a hundred fold, providing more and better jobs for its people, an ever growing return to its stockholders, and a far better product for its customers Michigan Carton looks at the past 50 years, not so much as a record of achievement, but as a challenge to the future, for "Growing with Cartons" has always been the moving force of the Company.

Making paperboard for cartons

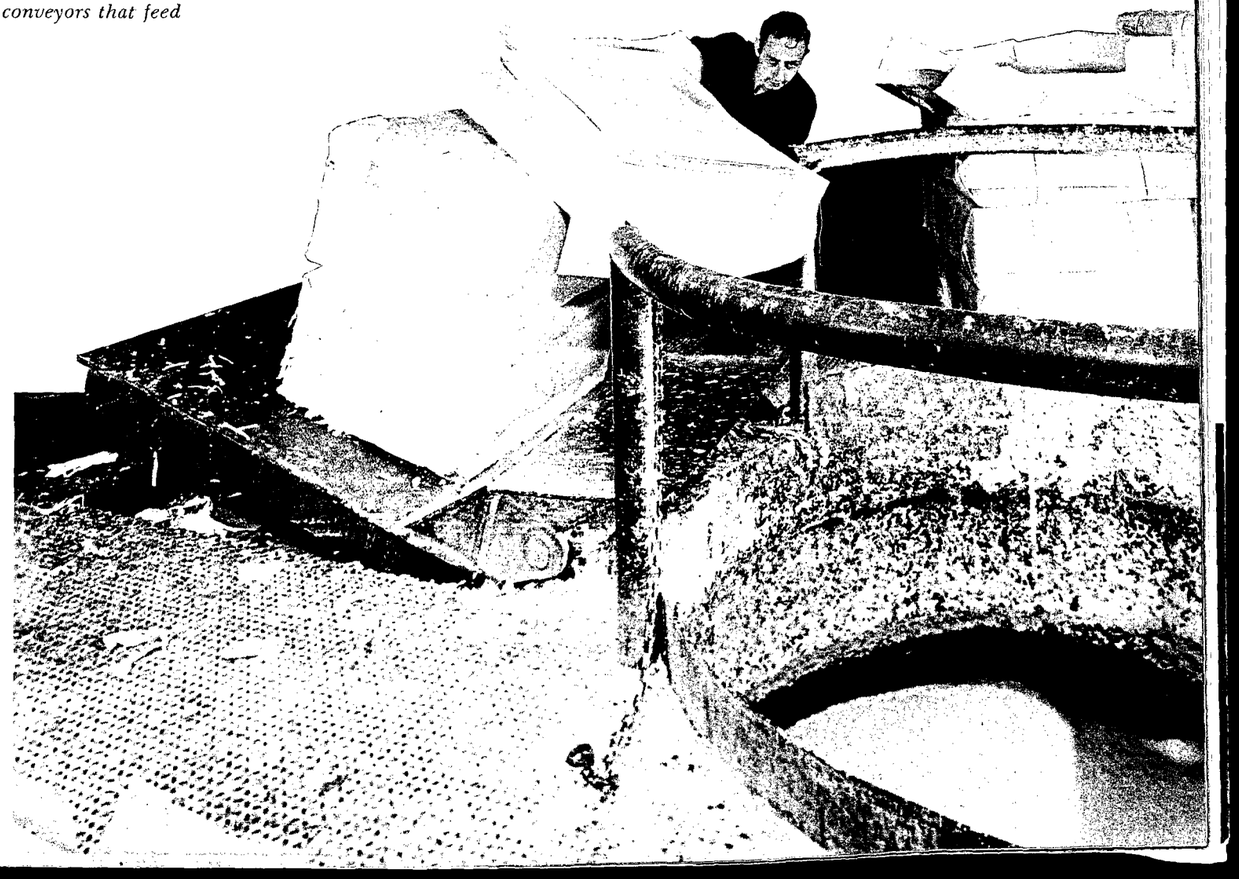
Michigan Carton operates three modern paperboard machines in its two mills at Battle Creek, Michigan. The Fountain Street Mill at the right, houses two of the three machines and the carton fabricating plant.
The first machine was installed in 1911 and the second in 1914. They have been modernized several times, and in 1953 the No. 1 machine was completely rebuilt. Plans are now under way to rebuild the No. 2 machine.
The third and largest of Michigan Carton's paperboard machines is located in the Angell Street Mill shown below, and was put in operation in June 1948. This plant was built new from the ground up at a cost of over $7½ million. The combined output of the three machines is approximately 400 tons daily.



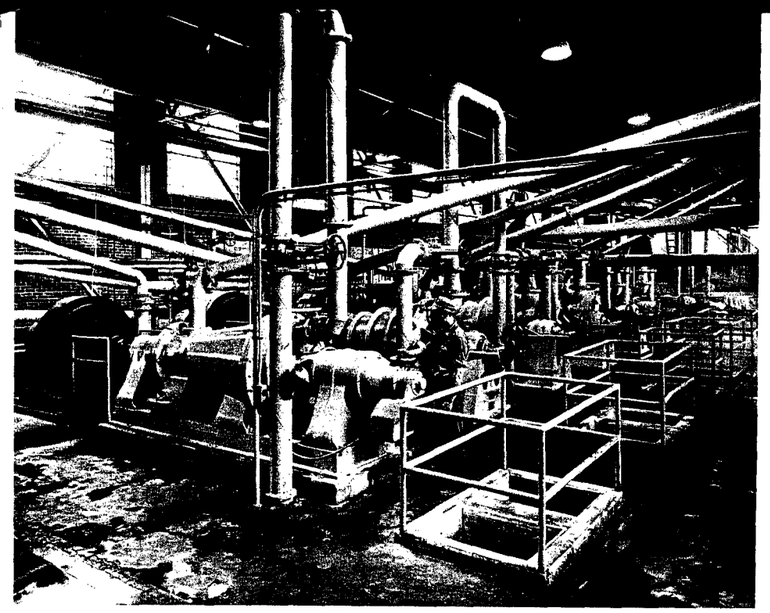


The most important raw material for making paperboard is waste paper, which comprises about 70% of the finished product. The other 30% is made up of pure white wood pulp and coatings. Waste paper arrives by rail and truck. About 275 tons of waste paper are consumed daily by the three machines. Jack Bays and Arthur Holstrom (standing) are shown above unloading the cars. Waste paper is placed on conveyors that feed it to the pulpers where it is mixed 94% water to 6% solids.

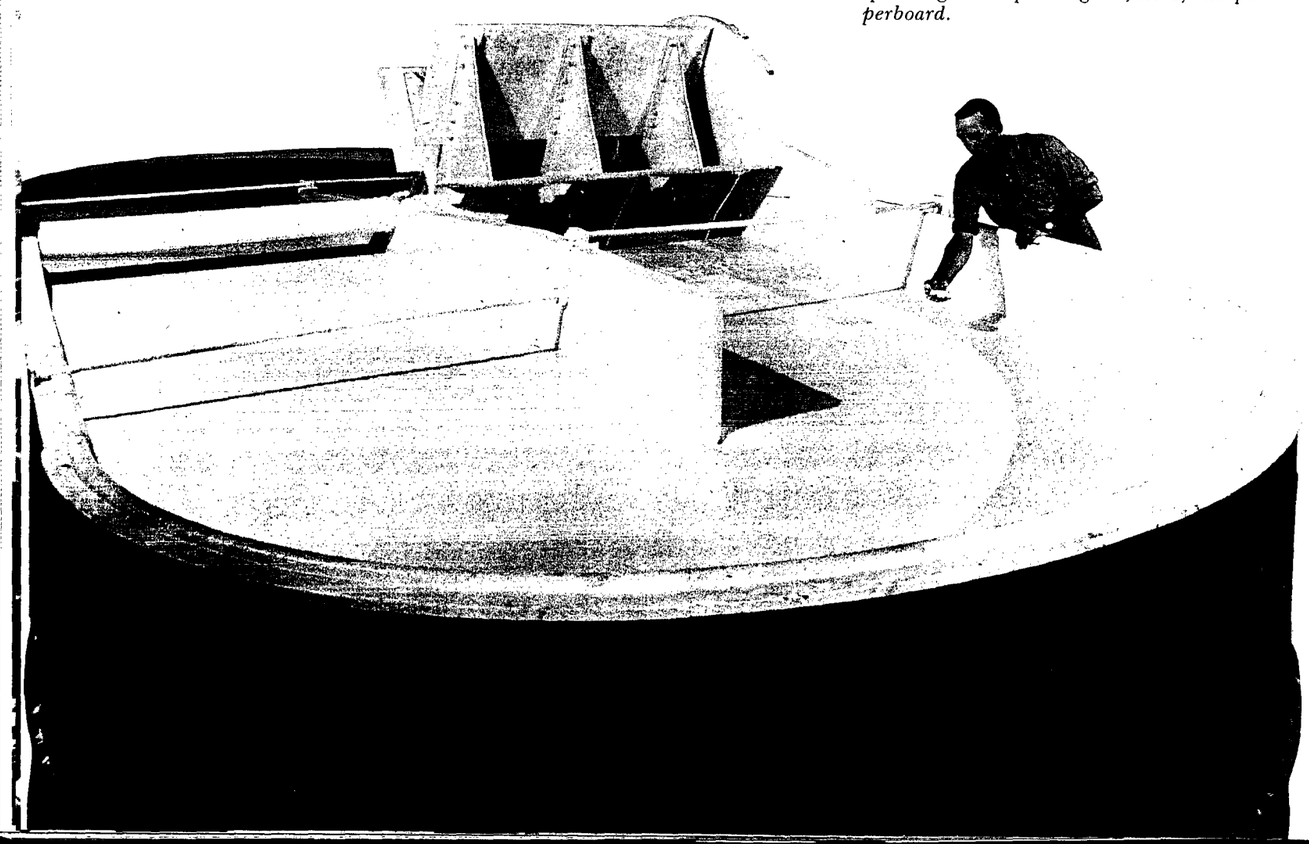
Milton, Julius, and Manuel Rotenberg of General Mill Supply Co., a continuous supplier of waste paper to Michigan Carton since 1918.



Pure white pulp receives a similar treatment. Melvin Roher is operating the lift which tilts the platform forward and dumps the sheets into the machine.



The filler stock from waste paper and the white pulp pass through separate lines to the Jordans. These machines hydrate and cut the pulp to the uniform fibrous mass required for the manufacture of quality paperboard. Ray Moran is making an adjustment on one of the Jordans.



Pulpers, Jordans and refiners reduce the raw material to a fluffy wet mass of individual fibres. Walter Wolney is examining a sample of the pure white pulp which will form the sparkling white printing surface of the paperboard.

Edward H. Barnes

Born in Dowagiac, Michigan, Mr. Barnes came to Battle Creek in 1910 to seek employment at the age of 17. He was attracted to Battle Creek because it was a boom town, growing rapidly, and offering opportunity for employment. On June 10, 1910 he was engaged by Michigan Carton as press room "devil," a sort of chore boy, messenger, odd jobs man and housekeeper. From this he was transferred to the glue room as a wrapper boy. In the spring of 1911 he moved back to the press room as a feeder, first step up to becoming a pressman, but this ambition was never realized.

He transferred to the mill office to become time keeper and clerk and held this position from 1912 to 1917 at the outbreak of World War I. He was then advanced to night superintendent of the board mill. As Mr. Barnes says, "The next 18 months were a nightmare. Labor was scarce and constantly moving out to higher paying war jobs. The night shift was a 13 hour shift and every night men failed to turn up for work. I canvassed dance halls and night spots looking for any kind of help. We had no personnel department to assist us. If I had known what was ahead of me, I would never have taken the job, but somehow I got through it and the mill kept going."

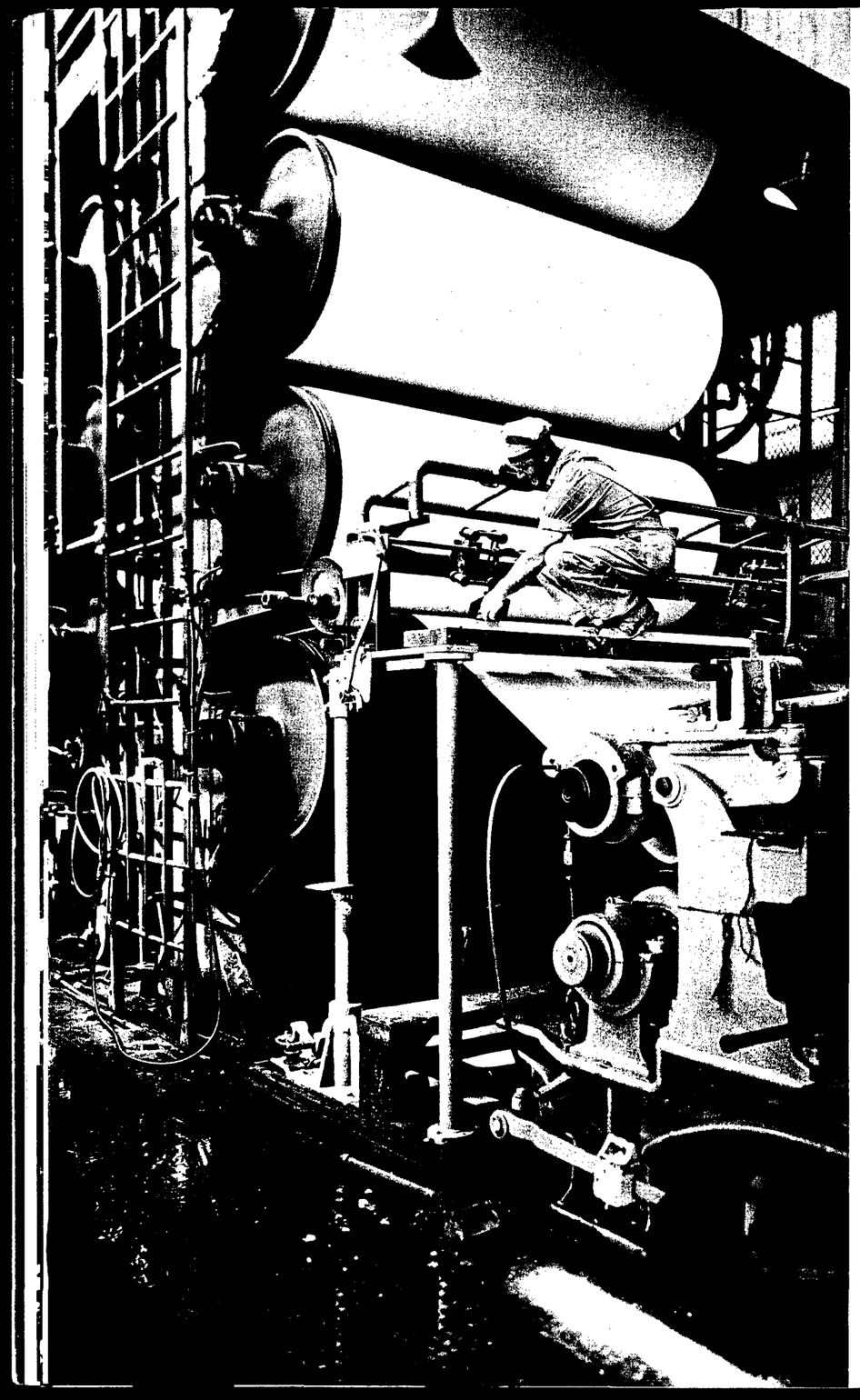
After the war Mr. Barnes became assistant mill superintendent and went on the day shift. In 1933 he was appointed head mill superintendent of the Fountain Street Mill. With the opening of the Angell Street Mill in 1948 he was made general superintendent of both mills and was also elected to the Board of Directors.

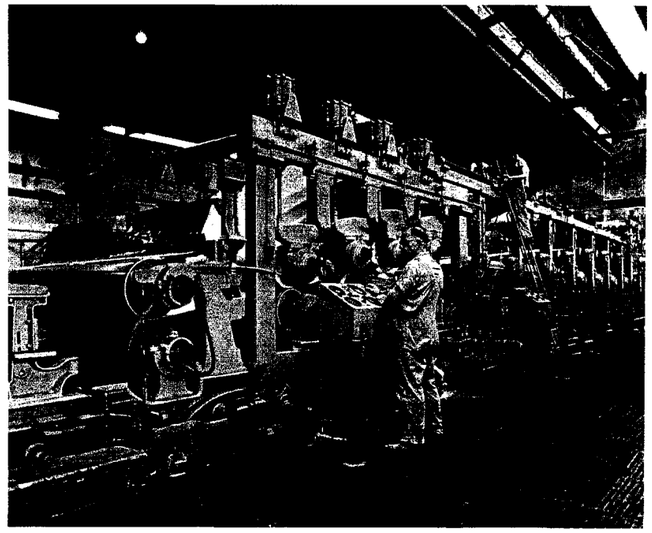
Ed had to start work at an early age because of financial circumstances at home. To keep up with his studies and get more education, he attended night school and took correspondence courses. He married a Battle Creek girl, Miss Leila M. Beard and settled down to raise a family of 3 boys and 2 girls. He also served his community as member of the Battle Creek Township Board for 4 terms, and Springfield School Board for 6 years. World War II put all three of his sons in the Army but they returned safely. Two of them, Richard E. Barnes, pressman, and Merle E. Barnes, steam engineer, are now employed at Michigan Carton.

In August 1953, Ed Barnes asked to be relieved of his job as general superintendent, for health reasons; however he has remained with Michigan Carton as manufacturing consultant, Director, and member of the Quality Control Committee, acting as chairman in the chairman's absence. Ed learned how to run a mill the hard way, by doing it, and he can still come up with the answers today.

The processed pulp arrives at the wet end of the paperboard machine and is deposited on revolving wire cylinders and then on a moving felt blanket. The backliner filler stock is put on first, followed by a layer of pure white pulp. A good view of the felt is shown in this picture of the Angel. A close up of one of the vats shows the pulp, a section of the cylinder at the right and the felt moving over it.

William J. Shaw, standing at the right in front of the paperboard machine is Superintendent of the Angell Street Mill. He is conferring with Gordon Hoy, Chemical Engineer.



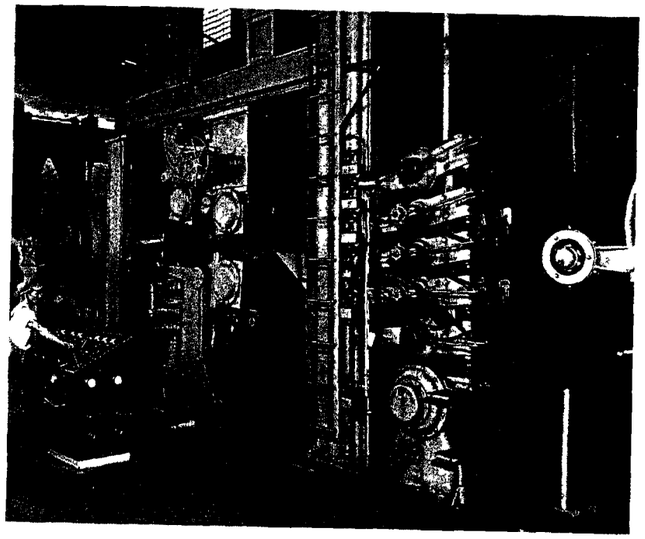


The felts, carrying the newly formed paperboard web, pass through a series of press rolls which squeeze out some of the water and press the fibres together. Julius Brauer mans the control panel, while Charles Jolly, on the ladder, inspects the felts.

The paperboard web leaves the wet end of the machine with about 35% water and then passes through the dryer section where the moisture content is reduced to about 6%. There are over 100 steam filled drying rolls in this section of the machine. Lee Fulkerson on the bridge is checking the caliper roll, a device that measures and controls the thickness of the paperboard.

When the paperboard leaves the dryer section it is ready to receive its finish Some grades are given a coating of clay applied to the surface of the paperboard with a roll coater William Rice at the control panel is facing this section of the machine.

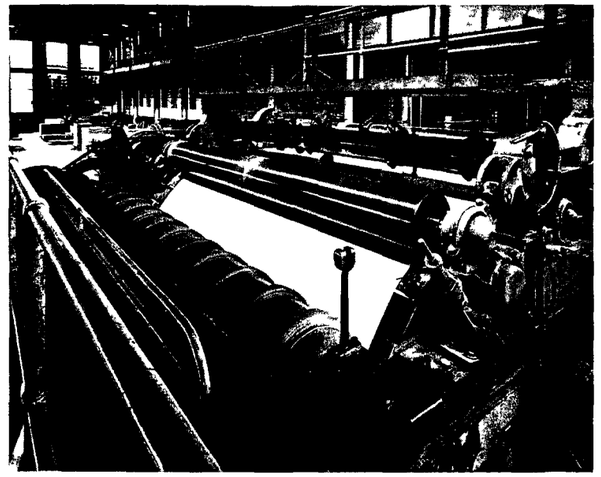
The final finish is imparted to the paperboard by the calender rolls which appear at the right, stacked one above the other. Two functions may be performed here First special coatings may be applied Second, the board is ironed and polished to a uniform smooth surface required for quality press work As a result, the printed cartons will be sharp and clean with uniform color values. These mirror finished steel rolls are machined as carefully as a fine watch

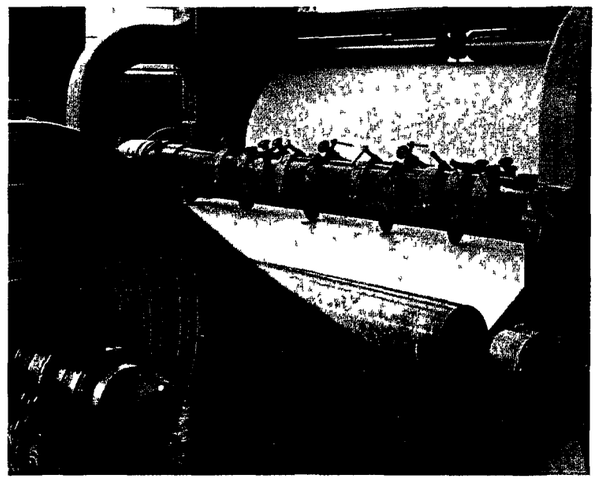


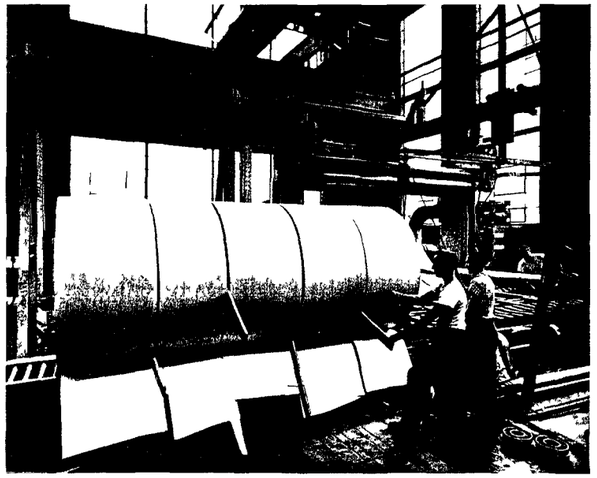
The finished paperboard web leaves the machine, a brilliant white endless sheet All that remains to be done is to cut it in convenient sizes for printing

Some carton presses print from continuous rolls. To supply these rolls in proper widths, the web is first wound on a reel. When the roll has reached the proper size it is moved by crane to the rewinder. The three men guiding the roll are (left to right) Leland Roddy, James Perry and Allen Hapner.

When sheets are required, the web passes through the sheeter. It slits the web into various widths with revolving knives, and into proper lengths by means of a rotary fly knife. The cut sheets fall onto skids, are strap banded ready for transport to carton printing presses.







Here the web is slit to proper widths and rewound on cores, ready for transport to the customer

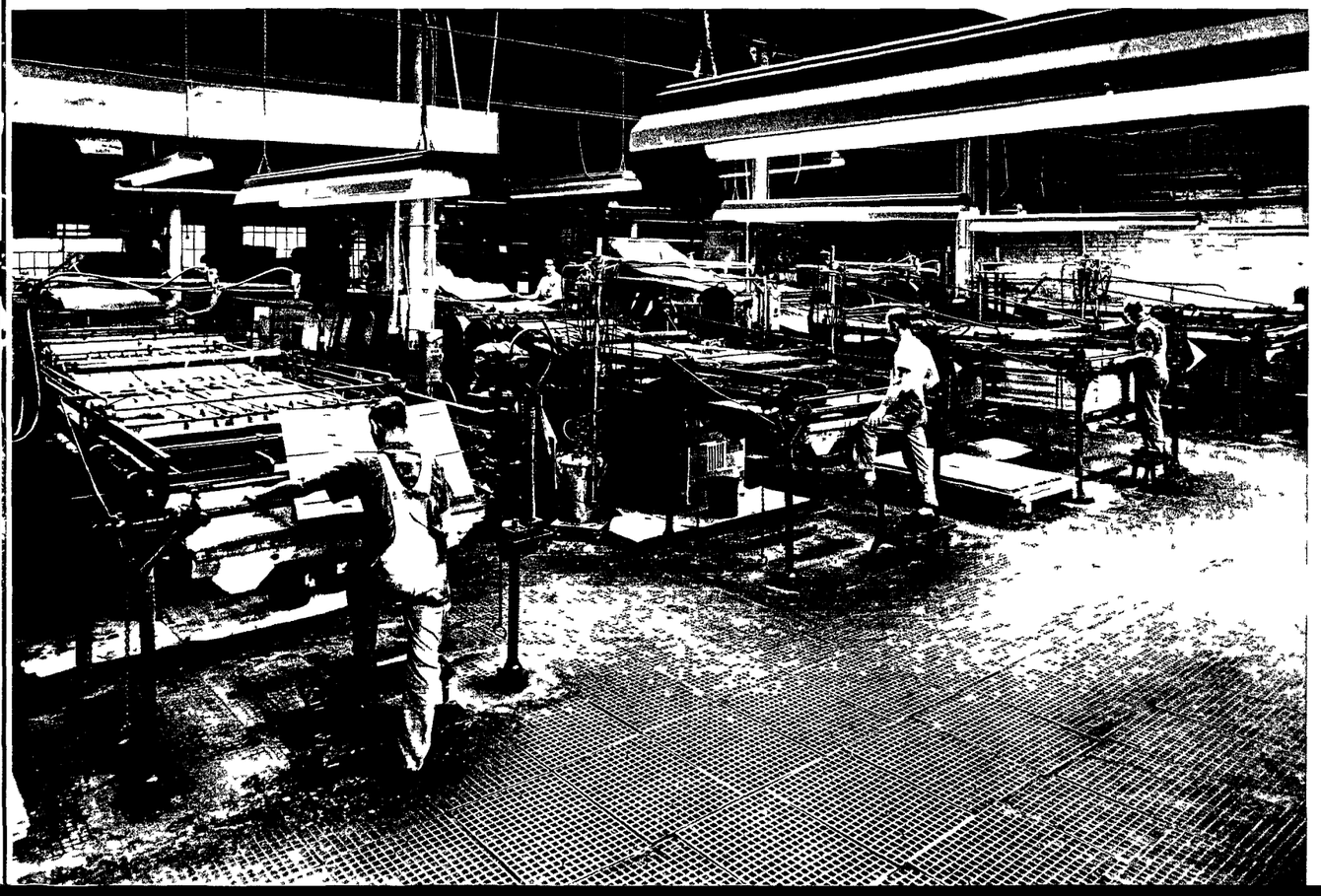
The tremendous precision of the machines can be appreciated when one realizes that this quarter mile long web of board passes continuously through the machines day and night without wrinkles or breaks.

Carton fabrication

There are three basic steps in the manufacture of folding cartons
The first step is the color printing of large sheets of board which usually contain more than one carton on each sheet

The second step is cutting and creasing the sheet to form the individual carton blanks
The third step is that of folding and gluing the blank to form the finished carton

Note The three pressmen in the foreground are Bill Jex, Harry Saxman, Howard Cronk



Frank H. Stowitts

Frank Stowitts was born in Grand Rapids, Michigan where he attended the Public Schools, later moving to Battle Creek to finish his secondary school education He did special work at Olivet College and also extension work with LaSalle Extension University in Business Administration to round out his education However Frank s chosen vocation was that of pressman

He obtained his first employment with C H Barnes & Co of Kalamazoo, worked successively for several printers in Kalamazoo and Lansing and was a full fledged Journeyman Pressman at the age of 18 He came to Michigan Carton at the age of 21 in February 1911, and signed on as a pressman His union standing was useful to the Company since some customers even at that time, requested the Union Label on their cartons

Frank lived about a mile from the plant at the top of a long hill and rode a bicycle to work I pedaled the route as many as 6 times a day and used to ride behind the street car, using it as a wind break, whenever I could," he says I thought I was pretty smart until one day I caught my front wheel in a snow covered cross over track, flew over the handle bars and slid a half a block on my stomach in back of the car

Another time I was almost forced out of the Company by a freak of nature It was early summer in 1917 and a threatening storm was brewing I noticed several skylights flopping in the wind and went over to close one Before I could get my hand on it, the full force of a tornado struck and the skylight, along with the entire roof of the press room, sailed off in the sky The building was badly damaged, but no one was seriously hurt "

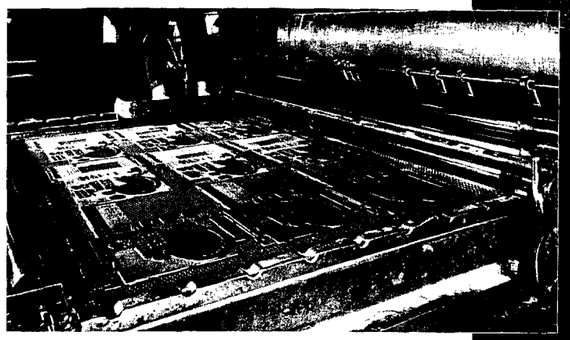
Frank s first promotion was from pressman to Assistant Foreman of the press room, then die maker, Foreman of the cutting department, General Foreman, and in 1931, Production Manager In 1936 he was elected Secretary of the Company and held the office until 1952 Today Frank is Senior Vice President, and Assistant Secretary

In the spring of 1930 Mr Stowitts made one of the early executive plane trips from Battle Creek One of our customers in Akron, Ohio was having trouble with cartons breaking on his packing line The situation

demanded immediate attention but a train trip would require 2 days and 2 nights. There were no commercial air lines in Battle Creek, but there was a man by the name of Randy Russell who owned an open cockpit 2 place Waco plane. The plane was chartered, Mr. Stowitts arrived in Akron at 11 A.M. He investigated the difficulty and returned to Battle Creek at 5 P.M. the same day. "I have been in many planes since," Frank tells, "but never one like this. The little plane bounced around in the chilly spring wind; it was the sickest day I've ever spent in my life."

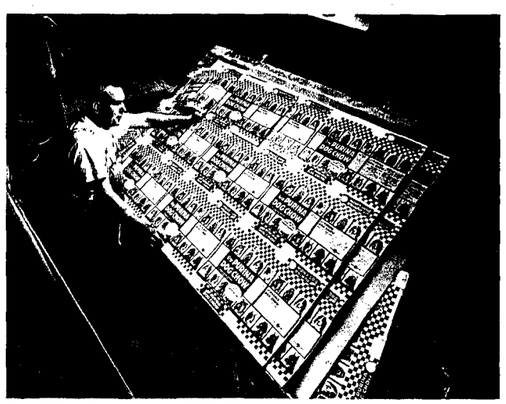
Frank Stowitts married Jane Frazelle and raised a family of two daughters, Mrs. Elizabeth Elliott and Mrs. Kathyrn S. McCaleb. He has seven fine grandchildren. His work for the Community has been outstanding, having served as President of the Battle Creek Hunt Club, Kiwanis Club, Community Chest, Y.M.C.A., Family Counseling Agency, Engineers Club, Humane Society, and Lakeview School Board, 9 years as President, 7 years as Secretary. At present he is Chairman of the Battle Creek Township Planning Commission, Hugh Conklin Hospital Memorial and a Board member for Red Cross, Child Guidance, and Battle Creek Hunt Club. He is a member of the Congregational Church and has served on several of their Boards.

Frank has been on many panels and is well known in the carton and paperboard industry. Some years ago he developed a new method of job evaluation by the employees that was extensively reported in Factory Management magazine. In addition to the executive offices he holds with the Company, he is also Chairman of the Quality Control Committee and head of product development. His 46 years of experience is a great asset to the Company.



When the design of a carton has been approved, printing plates and electros are made and locked up on the presses. Separate plates are required for each color to be printed. They must be accurately positioned to a thousandth of an inch to register the colors properly. This is a flat bed press, so called because the printing plates are locked to a flat surface.

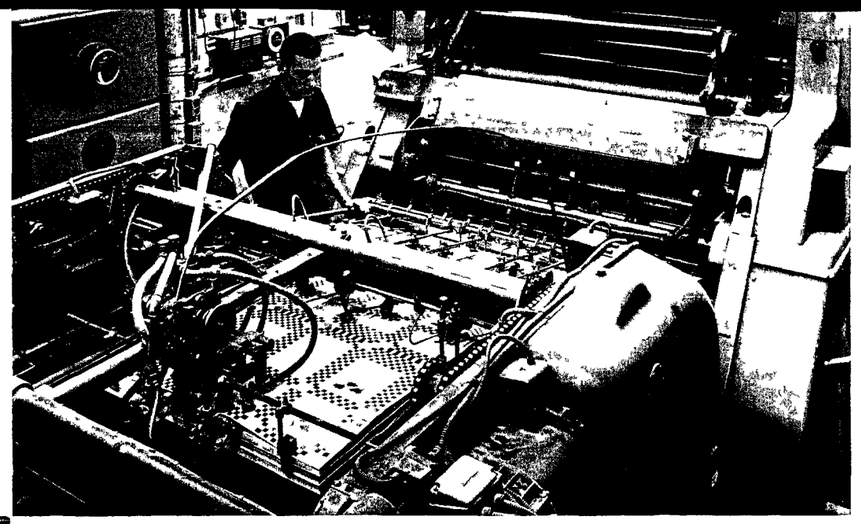
Pressmen Alfred Mudgett and R. Morgan (standing) are locking up plates on a huge 5 color press, one of the largest carton presses made. This is a rotary press, so called because the plates are curved and locked to a rotating cylinder. Each of the 5 cylinders prints a different color, but all 5 colors are printed on the board in a single trip through the press.



After the plates are locked up, register is carefully checked.

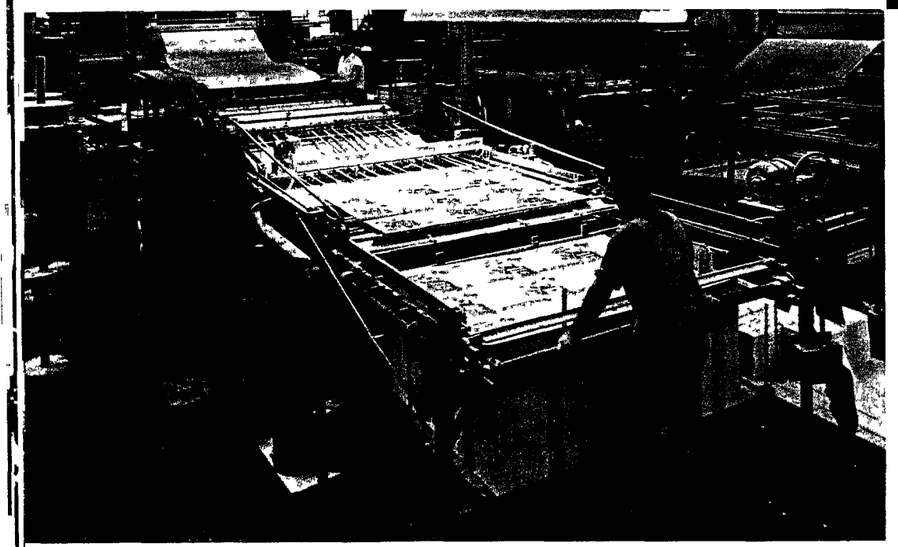
This is a high speed offset press that is capable of fine screen high fidelity process color printing. Unlike letterpress machines which transfer the ink directly from printing plate to paper, the plate of this machine first lays the ink on a rubber blanket, which in turn transfers it to the paper. Offset printing has some advantages not obtainable with letterpress printing for certain kinds of carton work.

Pressman Bud Laird is watching the automatic feeder, nearing the end of a run

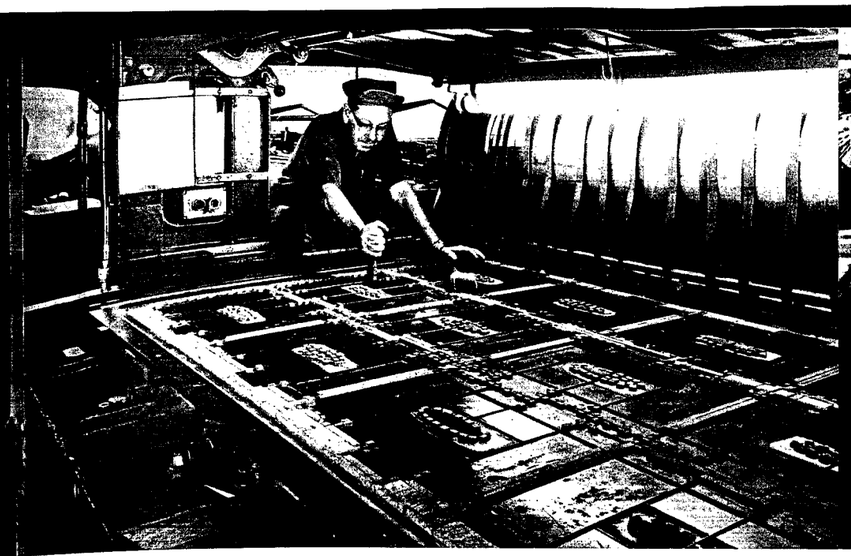


Michigan Carton presses can print from one to five colors simultaneously depending on carton requirements. This is a 2 color letterpress. In the background is feeder M. Brownell. Pressman James Frey is watching the delivery end.

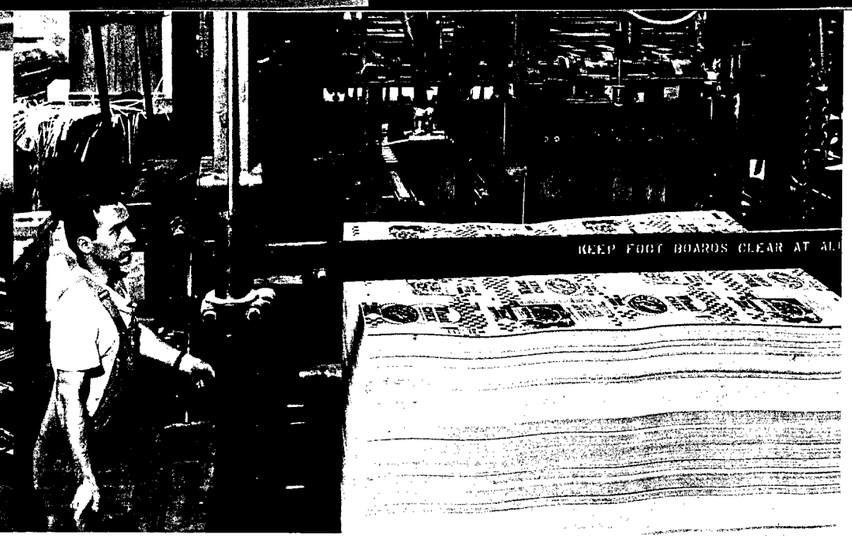
Large presses print many cartons on a single sheet. This sheet contains 9 cartons.



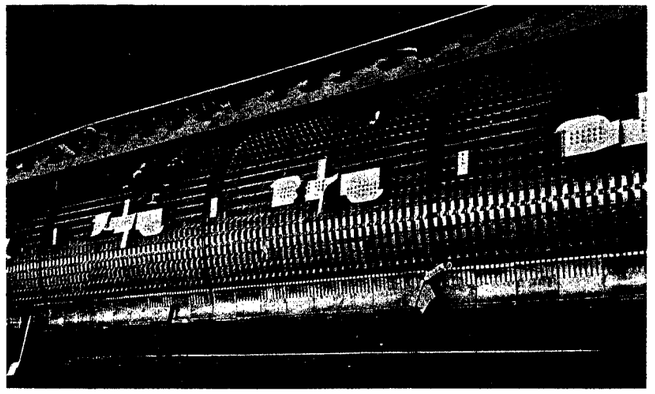
After the cartons are printed they must be die cut and creased ready for folding and gluing The cutting and creasing dies are very complicated and must register accurately with the color printing Die makers Ward Broughman and Ellsworth Bell are finishing up one of the dies. They are made with the same precision as the printing plates.



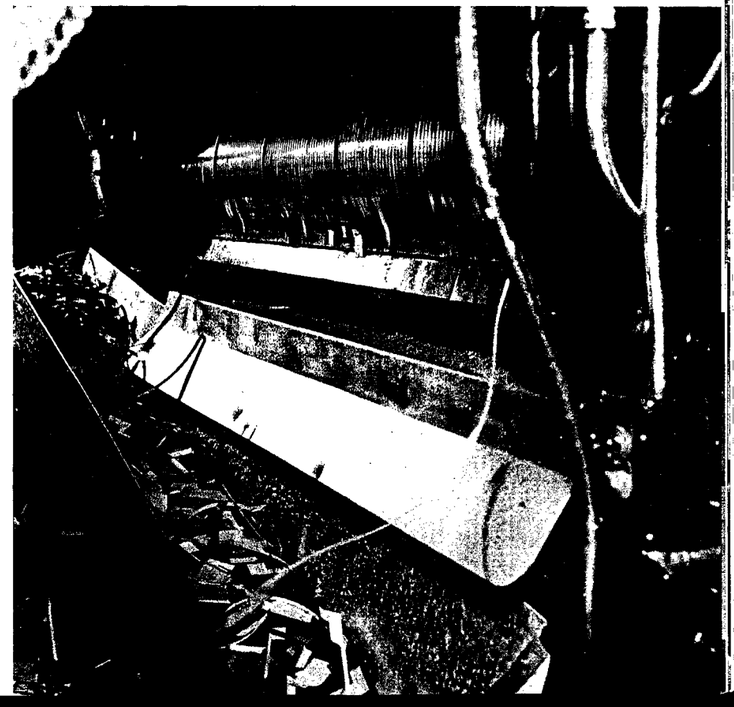
Cutting and creasing presses must be made ready and registered like the printing presses. The complexity of the dies which take every conceivable shape is aptly shown in this photo of Ivan Goodrich adjusting his make ready.



When the press has been made ready, the printed sheets are cut and creased. Pressman Richard Eib has just placed a large lift on the automatic feeder.



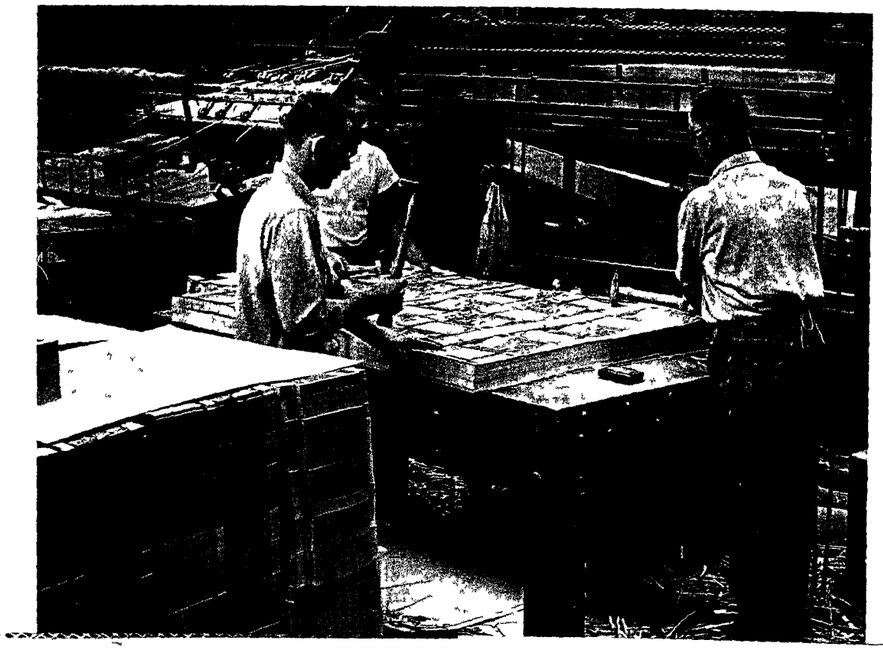
After the sheet is cut, waste parts must be stripped out before the cartons can be glued and folded. This machine is equipped with an automatic stripper which picks out the waste and delivers it to the scrap bin.



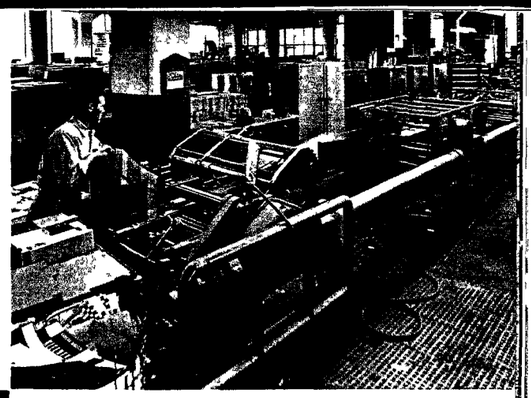
Cracking or separating the flaps on the carton ends insures smooth operation on customers' filling machines This hydraulic breaker does the job efficient ly Arthur Clayman is the operator.

Even though cut and stripped automatically of waste parts, the many cartons on a single sheet are tacked together for sheet delivery from the stripper This large lift of cartons is being separated by Farris Miles Jr with an air hammer which breaks the tacks holding them together

Short runs can be more economically stripped by hand Reading right to left, strippers Cecil Miller, Richard Gillis and Gordon Anderson are knocking off waste with ham mers to trim out the carton blanks

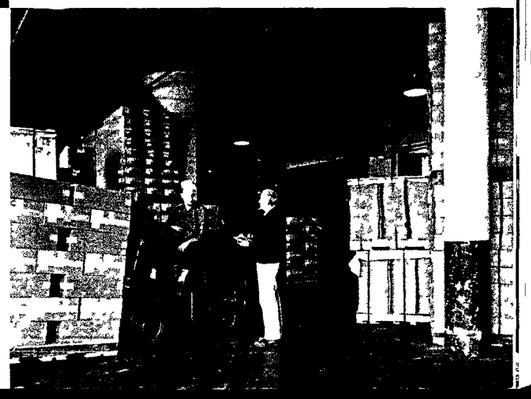


Folding and gluing machines handle the carton blanks at such high speed that the eye cannot see them except as a blurred line of flying paper Feeder Joseph Collige is loading at the rate of 40,000 cartons per hour. The reason the machine looks empty is that the camera, like the eye, cannot see the individual cartons pass through.



The completed carton is delivered from the machine on the stacker belt automatically counted in lots of 50. They receive a final inspection before being packed in shipping containers The four inspectors in the foreground are (left to right) Thelma Hulce, Irene Trumble, Violet Lewis, Mona Edmonds.

Shipping department must handle, sort, store, and ship millions of cartons to keep Michigan Cartons flowing smoothly on rigid schedules to customers. At top capacity they must route 3 to 4 million cartons per day Harold Jones on the truck checks a load with Fred Brooks.



Quality control

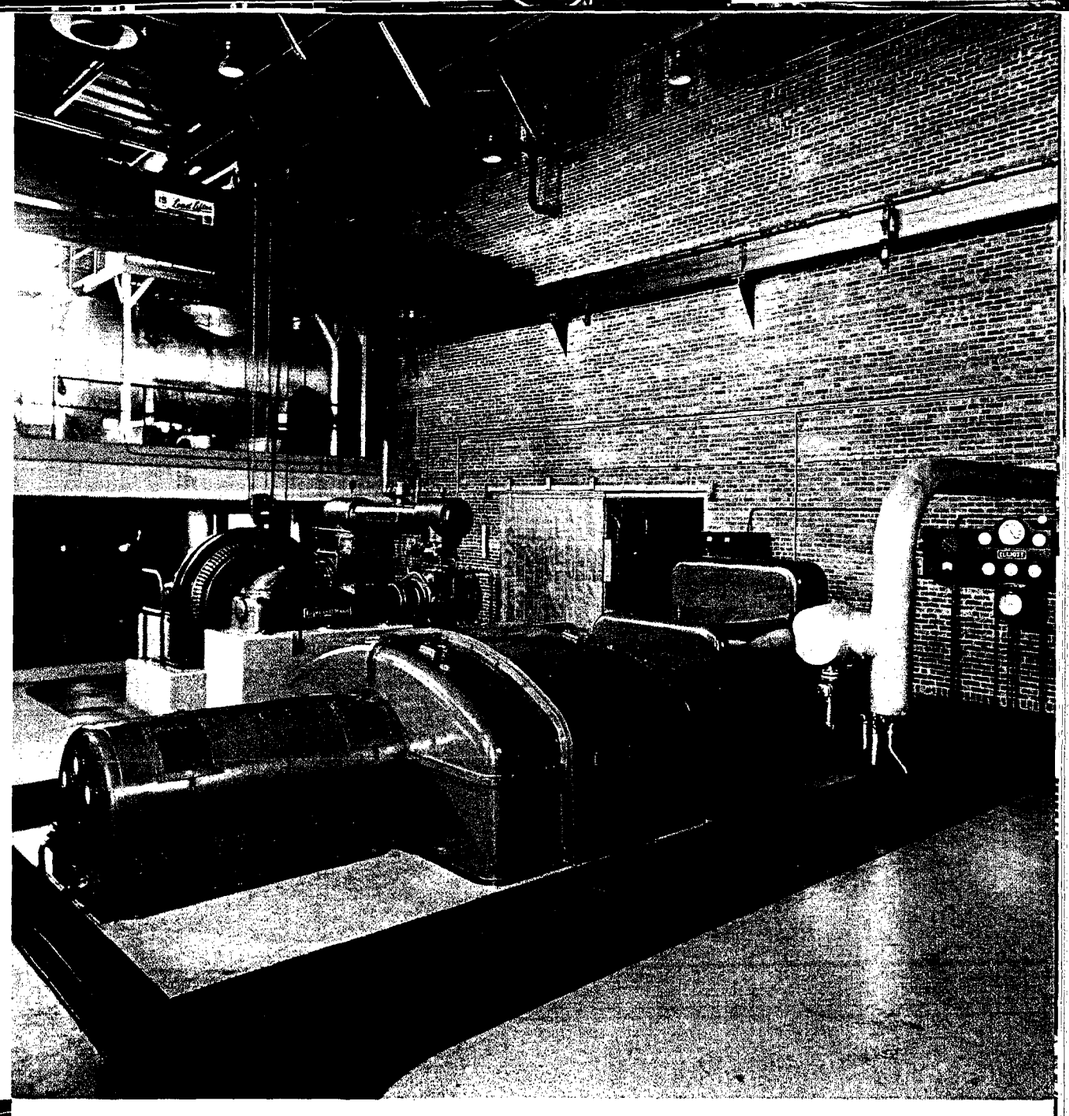
Six inspectors in the board mills and five in the carton fabrication plant maintain a constant vigilance over the quality of Michigan Carton Products Board is checked for caliper, brightness, finish, strength, bending quality, moisture content, and physical defects, and other characteristics Samples are regularly examined, tested, and filled with a quality control report William Gibson is making a strength test on one of the samples Files cover 1 year's production

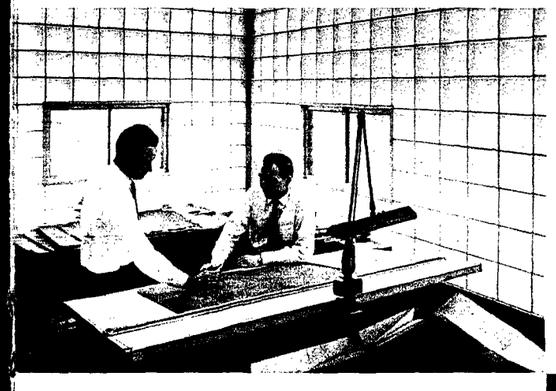
The Quality Control Committee meets daily to review all reports and evaluate statistically the progress made in the general overall quality of production. Specific problems are also discussed with suggestions and methods for improved control worked out by the committee as a whole. The Committee is headed by Chairman Frank Stowitts, Senior Vice President. Committee members present are (left to right) J. J. Harrison, T. Smith, W. O Kroeschell, E. H Barnes, Vice Chairman, C. H. Cameron, F. H. Stowitts, Irma Knapp.

Sample cartons are likewise checked for color match, register, accuracy of die cut, plate defects, smears, uniformity, or other defects and a report is sent to the carton fabricating department for analysis

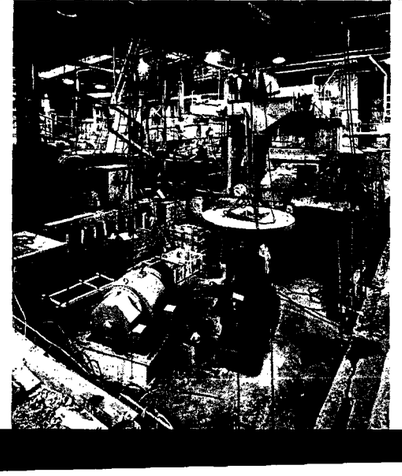
Power and engineering

Each Michigan Carton Mill has its own modern power plant. Steam generated in the boilers first goes to the turbo-generator to produce electric power. This is the Angell Street Mill generator. Exhaust steam is then piped to the drying rolls of the paperboard machine, doing double duty.

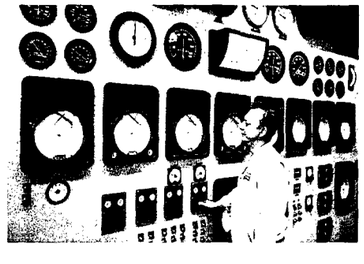




Head Engineer Lou Phillips confers with his Assistant Robert Armstrong over plans for the new 5 color offset press now being installed.



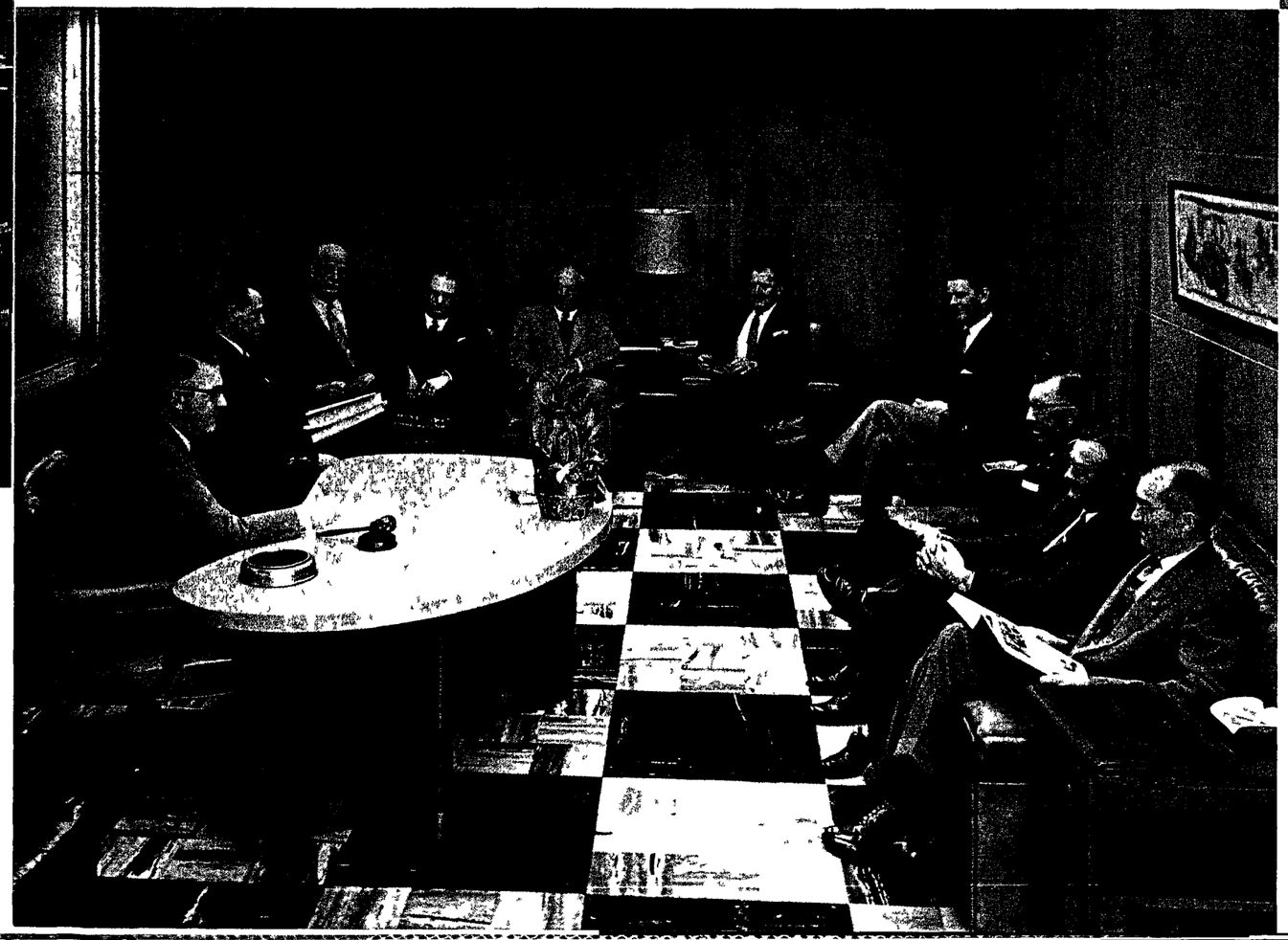
Modernization and replacement of equipment is a never ending process at Michigan Carton requiring an engineering staff, machine shop, and experienced erection crew. What looks like hopeless confusion in the picture is actually the orderly installation of a new pulper for the Fountain Street Mill.



Operating Engineer Jack Barnes is taking a reading of the control panel at the Fountain Street Mill. This power plant was completely rebuilt in 1955 with new boiler, turbo-generator, and control equipment.

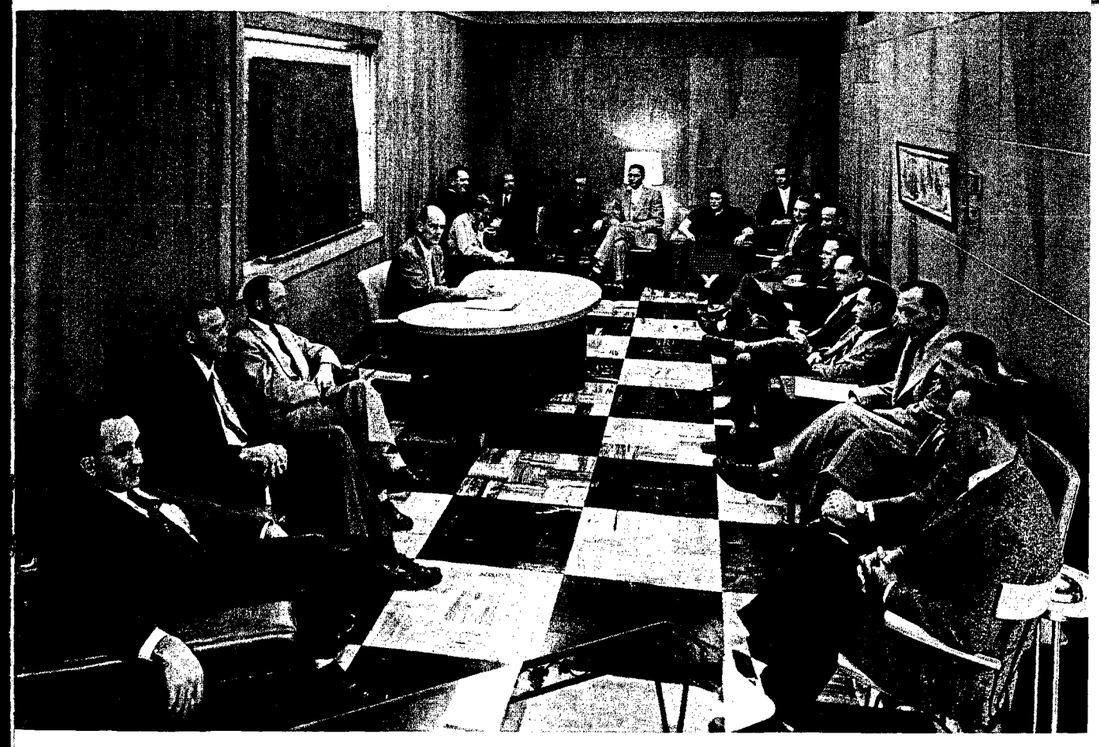
Michigan Carton Management

Lawrence Fell accepts a Commemorative gavel presented by William Bailey, stockholder, in honor of his 26 years as President and Michigan Carton's 50th birthday.



Michigan Carton Officers and Directors at the Annual Meeting of the Board (left to right)
Lawrence G Fell, President and Treasurer, C H Cameron, Secretary, Dan Int Hout, Vice President, Horace F Conklin, E. M Jenkins, J J Harrison, Vice President, James S Gilmore, Jr, E H Barnes, F H Stowitts, Senior Vice President, B S Sabin

Weekly staff meeting in which department heads gather to discuss common problems and to evaluate the week's progress. (left to right):
N. A. Pennetti, Mill Superintendent, Fountain St. Mill; C. F. Robinson, Chief Electrical Engineer; J. R. Vosburgh, Traffic Manager; Dan Int-Hout, Jr., Executive Vice President; Irma Knapp, Secretary; J. J. Harrison, Vice President, Boxboard Manufacturing; C. H. Cameron, Manager, Converted Paper Products and Secretary of Company; E. H. Barnes, Manufacturing Consultant; M. B. Wheeler, Manager, Production Control; L. M. Etter, Personnel Manager; Don Coleman, General Foreman, Carton Finishing Department; N. W. Schmitzer, Controller; Leo Styer, Purchasing Agent; J. J. Martinovich, Manager, Sales Service Department; W. O. Kroeschell, Technical Director; Louis J. Philipps, Chief Plant Engineer; J. L. Barclay, Chief Industrial Engineer; Robert S. Taylor, Carton Department Superintendent; W. F. McKeeby, Production Scheduler.



Discussing the general production outlook (left to right) *C. H. Cameron, Manager Converted Paper Products, Max Wheeler, Production Manager, James Harrison, Manager Paperboard Manufacturing, and Dan Int-Hout, Jr., Executive Vice President.*

Leo Styer, Purchasing Agent (left) *compares notes with James Dick, Assistant Purchasing Agent.*

Assistant Treasurer Wilbur Ingerson (left) *consults with Norman Schmitzer, Controller.*

MICHIGAN CARTON

Men and Women

In the foregoing pages you have had a chance to meet some of the people of Michigan Carton. We wish you could meet them all because each individual is a member of a group working for the common good of all. Michigan Carton is proud of the fact that practically all of the key executives, plant supervision, foremen and foreladies have come from the employees ranks and they have cooperated splendidly with the various unions because they realize the aims and ambitions of the workers are the same as their own. Michigan Carton feels that any employee worthy of hire is worthy of consideration and a voice in matters directly concerning him. Through their unions and committees, employees largely govern their own affairs.

Michigan Carton Co. employees were organized in July 1937 by J. Lyle Sage under the Federal Labor Union set up conceived by the A. F. of L. at the time the Wagner Act became law. The Union negotiated the first contract with L. G. Fell, Company President and James L. Orvis, Personnel Director, granting seniority rights, pay increases, vacations with pay, and a 36 hour work week. This contract, signed in September 1937, was hailed as the outstanding union contract by the paper mills of Michigan. During the 19½ years that Michigan Carton has been unionized only one serious work stoppage has occurred when the employees were on strike for 5 weeks in 1953. All differences were satisfactorily settled without violence or any damage to property. Today the Company has contracts with the following Unions:

International Printing Pressmen and Associated Union Specialities Local 489 A. F. of L.

Board Mills & Carton Division: International Printing Pressmen and Associates Union Specialties Local 601 A. F. of L.

Machine Shop: International Order of Machinists Local 46.

Electrical Department: International Brotherhood of Electrical Workers Local 445 A. F. of L.

Power Plant: International Union Operating Engineers Local 356 A. F. of L.

Each year the Company honors its employees who have given 25 or more years of service at a banquet given in the Company's recreational center. They receive a ring and membership in the Quarter Century Club

30 YEARS OR MORE

Name	Years of Service
G E Brockway	48
E H Barnes	47
F H Stowitts	46
C E Fuller	40
M Yepez	40
F J Rolfe	39
M Frary	38
L G Fell	38
C K Emerick	38
J L Wrate	38
L M Etter	38
I Martinovich	37
B Howard	37
L H Bird	37
J Sutherland	36
L Jencks	36
E Theaker	36
S Lawton	36
W J Shaw	36
C Ward	35
H Billings	35
J Collige	34
I Goodrich	34
J Darling	34
D Powers	34
D Lauer	34
W Ingerson	34
O Lopshire	33
H Gorsuch	33
H Frey	33
P Charlton	32
R Phillips	32
D Barte	32
J Moles	32
H Lewis	32
L Crippen	32
L Favorite	31
M Anderson	31
H Greenfield	31
R Day	30
F Brooks	30
F Darling	30
M Reese	30
M Bisko	30
L R Terry	30
M Foote	30
W Stick	30
G Hudson	30

25 TO 30 YEARS

J Vosburg	29
B Dove	29
G Hendrickson	29
R E Pierce	29
H Bird	28
H Pennock	28
F Weber	28
E Conant	28
R Palmatier	28
M Pickle	28
E Morris	28
D Int Hout, Sr	28
A Ward	28
C Cope	28
F Rapson	28
C Rugg	28
R Taylor	28
L J Poyser	28
M Alsman	28
H Smith	28
N Pennetti	27
R Nisbet	27
C Beaver	27
L Fulkerson	27
C Tripp	27
J Bramble	27
E Underwood	27
J Metzgar	27
B M VanDee	27
H Overacker	27
C Wilson	27
C V Ruthruff	27
B White	27
C Fish	26
J O Steele	26
M Goodrich	26
A Leonard	26
M R Sexton	26
W Schele	26
W Y Brandt	26
C H Cameron	25
C Miller	25
H Robbins	25

20 TO 25 YEARS

H L Chorpening	24
I Edens	24
E Wells	24
C L Jones	24
G E Hoy	24
S M Lind	24
R Reesman	24
E Grant	24
M Tungate	24
L Criffield	24
W F McKeeby	24
J C Myers	24
J C Beckett	24
A J Holstrom	24
M Wawzysko	24
J Brauer	24
A Crapo	24
M M Luhrs	24
F E Miller	24
H Smith	24
F Miller	24
M Artz	24
L Lewis	23
P Hull	23
G Goble	23
H Johnson	23
G F Miller	23
C Johnson	23
F Lusk	23
W A House	23
J Evkovich	23
R Tack	23
V Vandenberg	23
A Mudgett	23
C Morgan	23
G Conant	23
D Dilsaver	23
M B Wheeler	23
J Echelberry	23
C Hakes	23
A Parmalee	23
E Hendrickson	23
W Cowham	23
P Vandenberg	23
F Gregory	23
O Evans	23
R Washington	23
W Cook	23
J S Norris	23
C Lewis	23
A Buck	23
C Robinson	23
L W Sowers	23
W Knoll	23
A Kellerman	22
I Trumble	22
E Baird	22
L Wolf	22
B Johnson	21
E Grant	21
L Puyear	21
M Buchanan	21
R Porter	21
O Hagen Jr	21
M Crane	21
P Hull	21
L Styer	21
N Martin	21
H Myers	21
H Poupard	20
M Rogers	20
E Rogers	20
R Ludwa	20
G Spencer	20
N E Grey	20
S Yurisich	20
G Wilkey	20
H Groat	20
W Kellogg	20
V Rogers	20
L McCleary	20
C Rounds	20

15 TO 20 YEARS

C Hall	19
H Cronk	19
C Miller	19
W Wolney	19
M J Barnes	19
M Mrozovich	19
W Heinrich	18
G Pierce	18
Z Rounds	18
P Pugh	18
W Willison	18
W Campbell	18
G K Hart	18
R Moran	18
W Hendrickson	18
J Martinovich	18
C Hiatt	18
J Edwards	18
R Barnes	17
C Niceley	17
H Yepez	17
J McCormic	17
K Glyshaw	17
R Clemence	16
C Potter	16
A Yepez	16
E Keathly	16
R Campbell	16
R Inman	16
R Cipcic	16
L Zuber	16
L Briggs	16
W Bisko	16
L Walker	16
B Mladenoff	16
M Becraft	16
C Young	16
D Worthington	16
W Cox	16
D Reniger	16
S White	16
W Firth	16
P P Kubasiak	16
H Simmons	16
J Franklin	16
D Case	15
H Crisuell	15
I Brockway	15
N Rees	15
C Cutsinger	15
L Hook	15
K Solomon	15
R Kidney	15
V Eldred	15
E Pauley	15
T Hulce	15
E Boone	15
L Millsap	15
R Ramsey	15
T Jackson	15
E Pierce	15
L Harter	15
E Wallace	15
R J Crow	15

Job Evaluation Committee

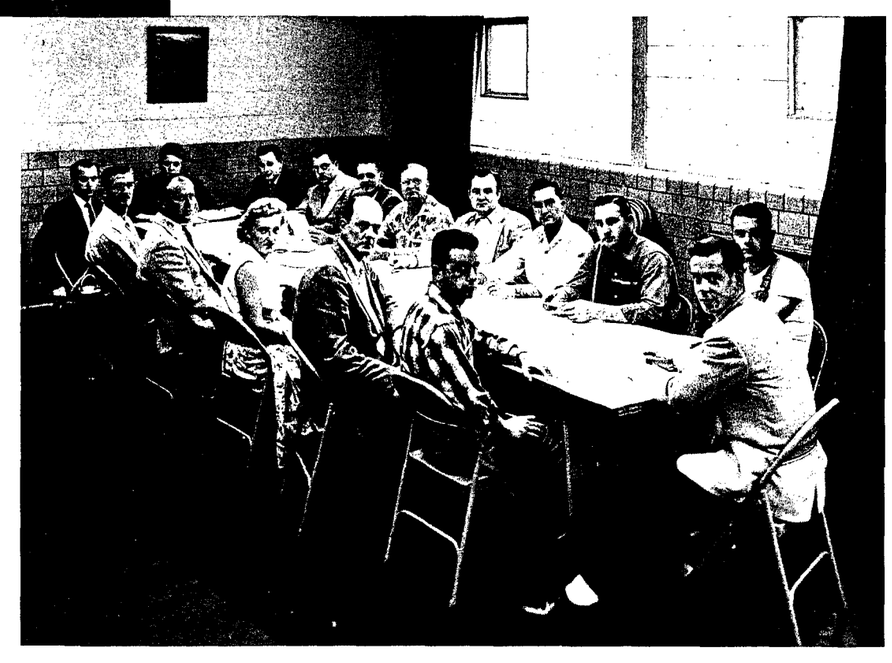
This committee meets twice a year to consider the record of performance of the men and women in training at Michigan Carton. As a result of these meetings employees are recommended for advancement in the Carton Division. This is the only committee and the only way promotions are granted. Notice that the majority of members are fellow workers rather than supervisory personnel.

Right to left, front side of table: *Bolden White, Printing Pressman; Humbert Yepez, President, Local No. 489, Cutting Pressman; Wilbur Willison, Financial Secretary, Local No. 489, Cutting Pressman; Robert Taylor, Carton Division Supt.; Lillian Etter, Personnel Director.* Back of table, left to right: *Cecil Cutsinger, Cutting Pressman; Harry Hewitt, Recording Secretary, Local No. 489, Printing Pressman; Glenn Griffin, Printing Pressman; Milford Tungate, Cutting Department Supervisor; Lyndell Bird, Printing Department Supervisor.*

Insurance Committee

Michigan Carton offers a comprehensive group insurance plan that includes Life Insurance, Dismemberment, Accidental Death, Sickness and Accident Benefits, Hospitalization, Surgical and Medical Benefits. Half of the premium is paid by the Company and the other half by the employee. This committee is the only instrument empowered to change insurance contracts or disburse any monies in return premiums from the carriers. Such monies must be used for the benefit of the insured employees. The committee is appointed by five unions, salaried employees, and management. An annual report meeting is held.

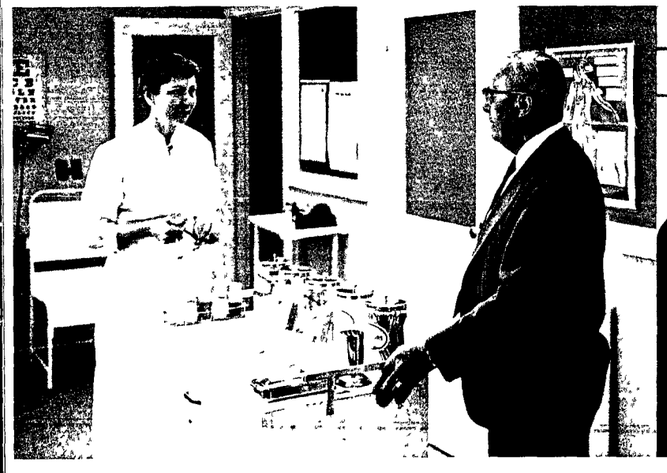
Reading from right to left at the front side of the table are: *Donald Coleman, Machinists' Local 46; Carroll Beebe, Electricians' Local 445; Dan Int-Hout Jr., Executive Vice President; Mary Jane Simon, Salaried and Clerical; Marvin Moldenhauer, Operating Engineers' Local 356; Kenneth Yaw, Electricians' Local 445; Charles Hook, I.P.P. and A.U. Local 601; Lillian Etter, Personnel Director.* Reading from left to right at the back side of the table are: *Lawrence Hester, Assistant Personnel Director; Duane Arnce, Machinists' Local 46; Maurice Daly, Operating Engineers' Local 356; Clarence Ward, I.P.P. and A.U. Local 601; Lawrence Adair, I.P.P. and A.U. Local 601; Boris Mladenoff, I.P.P. and A.U. Local 601; J. C. Edmonds, I.P.P. and A.U. Local 601; Harry Hewitt, I.P.P. and A.U. Local 489.*



Retirement Aid

Profits from vending machines and concessions in the plant as well as the sale of scrap materials are placed in the Retirement Aid Fund. Benefits are paid to employees with 15 or more years of service. Death Benefit is paid in the event of death before retirement. Monthly benefits are paid to retired personnel according to age and years of service. Women are eligible to retire at 55, men at 60. The Company in addition, pays the premium on the group life insurance for retired workers and will continue hospital insurance participation if the retired employee wishes to keep his policy in force.

In January 1957 the Company installed a pension plan based on a Trust agreement. The Company underwrites the entire cost, the employee contributes nothing. Employees with 10 or more years of service will receive a monthly pension at the time of their retirement from Michigan Carton. This pension will be in addition to any benefits due them under the Retirement Aid Plan.



Safety and First Aid

First aid stations in both Angell Street and Fountain Street plants are maintained with a Registered Nurse in attendance. Here Nurse Edith Sorum is discussing her work with Harry Billings, Director of Safety. All Michigan Carton employees are blood typed and contribute to a blood bank so that none ever want nor pay for blood in time of need.

Credit Union

The Company provides space for the Credit Union, but it is entirely owned and operated by the employees. Meet full time Manager H. W. Broughman. He is explaining a savings program with Ira Beach of the Electrical Department.

Lillian M. Etter

Mrs. Etter joined Michigan Carton on her sixteenth birthday April 12, 1919 as a press feeder, a job that she sorely needed but not what she had previously planned. The eldest in a family of eight children, she was raised in a neighborhood of large families and low incomes. As a child she resented the life of families with too many children and too little money and vowed to do something about it.
She decided to be a doctor.

She completed her high school credits in February of 1918, planned to do post graduate work until June, then on to College in the fall, but the accidental death of her father in March ended such plans. She had to find a job.

Mrs. Etter's resolve to help people never left her, and she relates, "I was fascinated with the trend of union organization during the middle thirties. I read and studied everything I could find on the subject. Maybe this was my opportunity to help my class of people.
I had failed to achieve the necessary training to do much about the too-many-children part, maybe I could still help on the too-little-money. I became active in union organization work."

In 1937 Michigan Carton was organized under Federal Labor Union 20910 A.F. of L. and the first contract negotiated with the company was hailed as the outstanding union contract by the paper mills of Michigan. Mrs. Etter's work for the union during the time had been done so well that when the first full term officers were elected, she was the Union's President.

The next six years were busy ones, press feeder by day, union officer and student by night. Her sincerity, honesty, and devotion to principle became respected equally by the Company and the Union.
In 1941 when the need for an assistant personnel manager arose, the Company asked her to take the job. She accepted. Three years later when Personnel Director Thomas Howard died, she was appointed Personnel Director, a position she holds today.

Personnel work involves human relations usually of a confidential nature, but one incident about herself she is willing to disclose. She registered at a Detroit Hotel to attend a meeting of the Paper Mill Personnel Directors Association. When the clerk summoned the bell boy he said, "Show Mrs. Etter to their room." "Since I had come alone," she said, "I was somewhat puzzled but followed the boy to the room. When he opened the door I was confronted by a total stranger in a dressing gown, smoking a cigar. Neither of us spoke so the bell boy broke the silence by announcing, 'Mr. Etter, your wife is here'."
After recovering from a double shock, Mrs. Etter learned that the stranger was Wilber Etter, Personnel Director of River Raisin Paper Company. Her real husband is Elton T. Etter, a structural steel rigger with a Battle Creek firm.

Mrs. Etter has been an outstanding Personnel Manager since the end of World War II. She is considered an authority on labor problems throughout the State. She attends many meetings, is a member of the National Association of Manufacturers, and her opinion is often sought and highly regarded. Mrs. Etter's principles can be aptly summed up in her own words, "When there's a fair day's pay for an honest day's work, everybody prospers."

Just having Fun

The Company sponsors recreational activity to promote good fellowship among employees after working hours Golf, Bowling, Baseball, Softball and Basketball teams are a part of this activity The Company feels that these social contacts lead to a fuller measure of enjoyment by the men and women of its community and give new employees an opportunity to meet people in what otherwise might be a totally strange new home

Michigan Carton Girls of Women's Independent League Trudy Gleason, Jean Robinson, Juanita Eisenberger, Irma Knapp, Pat Rozell.

Bill House in championship form, helped bring home the bacon for his winning team.

Champion Michigan Carton League 1955-1956
W. House, R R Champlin, R Lane, W Graham, C Fuller

Michigan Carton A2 Softball Team 1956 Left to right back row *R. B Knight, Bob Galle, Len Carlson, Marvin Moldenhaver, Wynn Cox* Front row *Tom Smith, Al Rose, Joe Obrochta, Rollie Eckharte, Maurice Daly, Steve Blazekovic, Manager*

Helping in Community Affairs

With hand and heart, Michigan Carton men and women have always responded warmly to the call of duty in community affairs. They give generously of their time, effort, and money to support its welfare agencies and willingly lend an extra hand on special projects when their help is needed. The record is one of which they can be justly proud, because everyone participates in some way.

Red feather time and Michigan Cartons Girls pitch in to put the drive over the top.

Junior Baseball. Reading left to right: (Top) *Harry Pennock, Asst. Manager, Doug. Pennock, Burt Sidnam, Steve Hart, Ken. Hart, Manager.* (Kneeling): *Junior Winkler, Alvin Stephenson, Ronnie Feiser, Nick Pestun, Jeff Carrington.* (Sitting): *Chip Sweet, Tom Hayes, Jim Padelt, Jim Lee. Michigan Carton provides the equipment and Michigan Carton Men the instruction to make this team possible. Play Ball!*

Doug Pennock, pitcher, puts over a fast one to get the youngsters off to a good start in our national sport

Junior Achievement

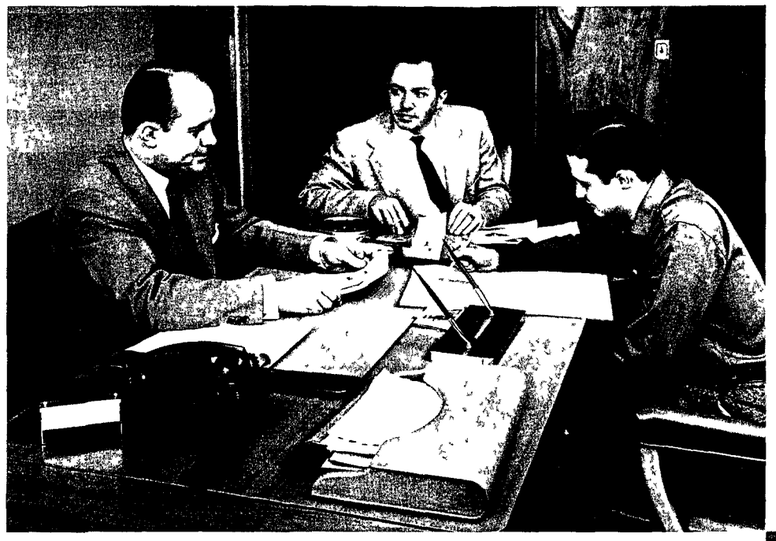
The purpose of Junior Achievement is to teach high school students the American Free Enterprise System of business They have formed a company by drawing up rules of incorporation, selling stock to raise working capital They engage in some form of fabrication or packaging, to add value of manufacture, sell their product at a profit At the end of the school year after expenses have been paid, the company is liquidated and the original investment plus any profit, is distributed to the stockholders according to the shares of stock owned In this case the product is personalized book matches The manufacturer sells the students the matches (made from Michigan Carton paperboard) and they in turn gold stamp the customers' initials on the covers, package and deliver them to buyers In addition to the profit they make, recognition is given to well managed projects in local, regional, and national contests

Personalized Products Company, 1956-1957, Sponsored by Michigan Carton Left to right *George Casterline, Micheal Coffman, Charles Stewalt, Patricia O'Connel, Randy Reeseman, Advisor, Virginia Comodall, Janice Wilbur, Norman Schmitzer, Advisor, Patricia Coffman, Jacquie Vallozzo, Martin Hayes, Junior Achievement Director, Dave Wilkens,* (Front) *Harold Criswell, Advisor.*

Looking ahead through research and development

Research at Michigan Carton is a growing activity designed to keep Michigan Carton men and its clients informed on all the aspects of packaging pertinent to any given product. It moves in two general areas, technical research and market research.

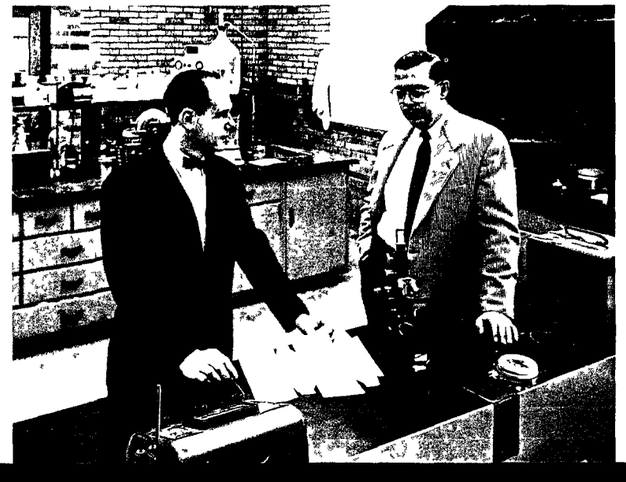
Technical research is centered in the Company Laboratory and is largely physical in nature. Here new methods of making paperboard are studied and tests conducted on coatings, laminations, inks and other materials involved with board making and carton fabrication. In addition to materials, methods of manufacture are also studied. Our technicians also work in close cooperation with the laboratories of our suppliers and customers exchanging much valuable information with them.



Howard Elkins, Merchandising Director (left) *and Harold Hanselman, Salesman* (center) *are looking over sketches for a new carton design submitted by a commercial artist.*

Market research as the name implies, is carried on chiefly in the market where goods are bought and sold. The Merchandising Department carries out this work by studying market information, surveys, contacting chain store buyers, wholesalers, consumer panels and others involved in the distribution, sale and use of the product. Consumer preferences and buying trends are learned, and store merchandising techniques studied, particularly as they relate to packaging. Knowing what the public is buying or how it would like to buy, as well as how the stores like to sell, is invaluable to a manufacturer approaching a new packaging problem. The Merchandising Director seeks these answers and makes them available to Michigan Carton clients.

Technical Director, W. O. Kroeschell (left) *is discussing a technical problem with Edward Cole, Supervisor of Quality Control, in the Company Laboratory.*



Don Wheeler, Chief Carton Designer (left) *and Pat Bundy* (right) *are checking new carton designs with a filling machine consultant. All phases of design must be considered, including the limitations of the filling machines in operation at the customer's plant.*

New products may be developed as the result of this research and the presentation of an actual sample package, made up by Michigan Carton's Design Department, to a carton buyer. Or it may develop in reverse with the client's problem presented to Michigan Carton for suggestions and advice. In either event a Sales Representative of the Company is likely to be involved. For the primary function of these men is to get information to clients when they need it. He saves the client's time by going to his office. He will call upon the Technical Director, the Merchandising Director, the Carton Designer, if assistance is needed from them. Or he may check with sales service if the matter is one of expediting an order already in the plant.

Harry Chorpening, Sales Manager (right) *gets the story on a customer's requirements from Salesman, Henry Stoner.*

John Martinovich (center) *is Manager of Sales Services. Here is the man who finds the answers when client or representative gets in touch with the home office. He is collecting information for a customer from Roy Nisbet, Sales Services Correspondent* (left) *and William McKeeby, Production Scheduler* (right).

Dan Int-Hout

Mr Int Hout, Michigan Carton's Vice President in charge of sales, has spent a lifetime in carton sales work. He was born in 1892 in Oak Glen, Ill. His father owned a general store and Dan says, "My first experience with cartons was that of restocking the shelves in Father's store. I was instructed to push the boxes to the rear of the shelves so customers would not get the impression that we had a large stock. This would indicate that the product was not selling and therefore must not be very good. That was a far cry from today's methods of mass merchandising and display techniques"

After Dan finished high school, he attended the Chicago Art Institute for 2 years, since his family thought he might find a career in art. In 1912, at the age of 20, he went to work for a Chicago carton concern in carton sales After 7 years with them, he accepted the position of Sales Manager for the Carton Division of a large Mid Western concern. He joined forces with Michigan Carton in the spring of 1929 and was soon promoted to Western Sales Manager with an office in Chicago.

In 1944 during World War II, Mr. Int-Hout was loaned by Michigan Carton to the War Production Board where he held the position of Chief of the Folding Carton Section. The following year he became Chief of the Paperboard Section of that agency. During the Korean War he was again called to service by the government as Consultant to the National Production Administration and today holds the office of Executive Reservist to the Business and Defense Services Administration. In addition to his government work, he is a Director of the Folding Paper Box Association, a Director of Research and Development Association, and a member of the Paperboard Standards Committee of National Paperboard Association.

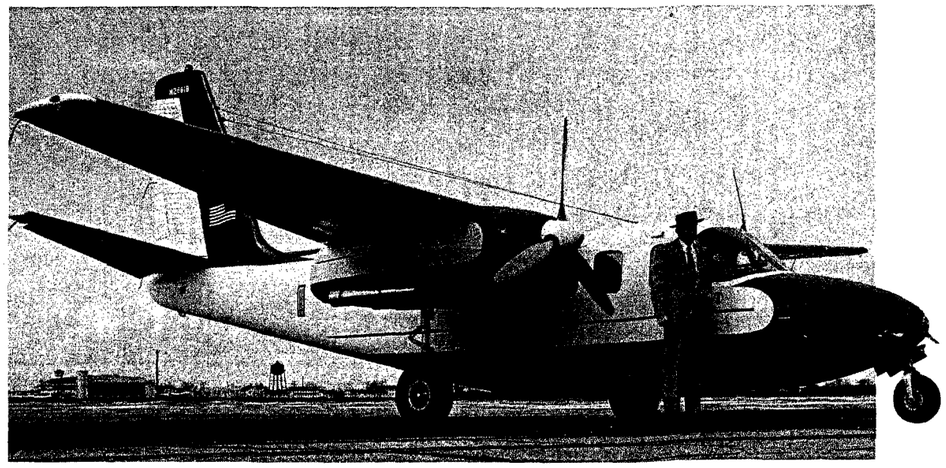
In 1949, Mr Int Hout was elected a Vice President of the Company, an office he has held ever since. He is also a member of the Board of Directors.

Dan and his wife Mae reside in Deerfield, Ill. They have two children, Dan Jr. who is Assistant to the President of Michigan Carton Co., a daughter Wynanda, and several grandchildren. Although Dan did not make a career of art, he still pursues it as an avocation and is considered a very good artist by his many friends in the trade.

(left to right) *Claud D. Parr, Salesman, Marie T. King, and Morrie E. Stimson, Chicago District Manager at the Chicago Office of the Company.*

To expedite sales and service, the Company maintains an airplane and pilot for the sole purpose of putting Michigan Carton experts in the client's office on short notice, or to fly the client to us if it is to his advantage. The TWX Teletype will furnish written confirmation to any teletype station in a matter of moments.

This combination of men and machines, to build a better product, and to give a better service, keeps Michigan Carton "Growing with Cartons."



Duane Crandall, Pilot and the Company's "Aero Commander."

Teletype operator Trudy Gleason

To be continued . . . . . .

And so the book ends but the story continues,
for today's ending is but tomorrow's beginning
and many new chapters lie ahead.

IS YOUR NAME SMITH? . . See Page 10

BATTLE CREEK LAKEVIEW
Record News

BE WISE USE RECORD NEWS CLASSIFIEDS

VOL. 21 — NO 6 BATTLE CREEK, MICHIGAN, THURSDAY, FEBRUAY 7, 1957 12 PAGES — 1 SECTION PRICE 10 CENTS

MICH. CARTON EXPANSION SEEN AS FIRST EVIDENCE OF FLOOD CONTROL BENEFITS

Membership Over 350 In Urbandale Ass'n

Charter members of the Urbandale Improvement Association made house to house calls at some 1,300 Urbandale residences last Saturday during their campaign to build up membership in the recently formed group

According to Harold L. Beers president of the Improvement Association membership now stands at 350 "The final total will be much higher Beers said, many people weren't home last Saturday morning and association workers had to leave the membership cards stuck in doors for mailing when the families returned.

"The membership drive got underway early Saturday morning" Beers said "workers in the association met in the community room at the Urbandale People's Savings building to receive instructions and their supply of membership cards Then we made personal contacts with as many families in the area as possible The results of the campaign are still coming in he added.

Last night the executive board of the Improvement Association met to set up committees to study Urbandale problems. The group plans to take action on the following questions or problem areas fire stations schools, bus service and youth activities

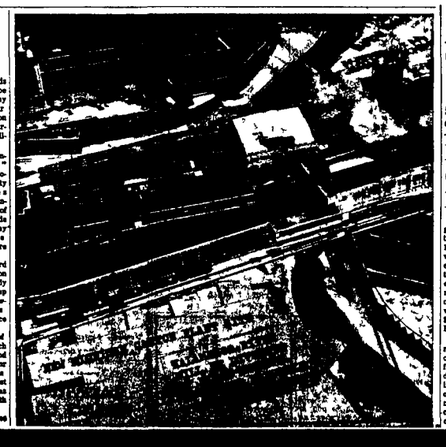
"We have already talked to officials of the Battle Creek Coach Co Mr Beers explained, and they welcome any suggestions for improvement which our association can make. This is the first time that any such group has tried to work out a solution with the bus company" he added.

According to Beers, committees

Lawrence Fell Honored By Co. Directors

As the Michigan Carton Company celebrates its 50th anniversary this year it is noted that for more than half of this period the company has been headed by Lawrence G Fell who also serves as treasurer for the firm In recognition of this outstanding service Mr Fell was honored this week at the annual stockholders meeting

During the meeting board members praised Mr Fell for the way he has dedicated his efforts towards the welfare of the company and his double duty as president and treasurer which began 26 years ago. Citing the tremendous growth of the Michigan Carton Co which is now numbered



Additional Land Available When The Old River Channel Is Filled

The announcement by the Michigan Carton Company which celebrates its 50th anniversary this year that it will expand its carton plant is the first concrete evidence that Battle Creek's flood control program is paying off

Lawrence G Fell president and treasurer of the company announced that the firm has purchased the old Merchant Lumber property on S W Capital Avenue owned by the New York Central System and under lease for several years to various tenants The property will be used for an addition to the firm's carton plant to alleviate present crowded conditions

Plans for the expanded plant indicate that the company will use more than just the lumber company property After the new Kalamazoo river channel is cut the present stream bed, at the rear of the lumber yard, will be filled providing additional land for the structure. Thus this property will be the first reclaimed land to be used as a direct result of the relocation of the river channel

It was pointed out that the Merchant Lumber Company property had been considered before for expansion, but that the flood damage potential always made its use impractical. With that threat removed, the new plant will be erected which it is estimated, will nearly double the capacity of the firm's carton department. It will probably also mean an increase in the company's 1 000-man payroll when the new plant is in operation The expanded plant will be used for both manufacture and the storage of finished products

Lands Faith in City

William V Bailey executive director of the Railroad Consolidation Board said yesterday that the announcement of the expansion is the first evidence of the success of the flood control project and that, when the program is completed, much more land will be available for industrial and commercial sites. He also stated that early use of this land is a great help to those who are plan-

Final Phase Of '57 Polio Drive Begins

With $17 191.18 collected in the greater Battle Creek area towards the $60 000 county wide goal in the 1957 polio campaign, local workers were concentrating on mop-up operations this week in an attempt to bring the drive to a successful end Of about 30,000 coin cards mailed to Calhoun county residents only 2,800 had been returned this week with contributions totaling $5,323 60 according to Arthur H. Berridge campaign treasurer

The largest single collection was realized from the Mothers March of Dimes which netted $8 033 20 for one night's work. Another productive effort was the solicitations in the business district by members of the Junior Chamber of Commerce. On the two Saturdays Jaycees collected $1 699.38 towards the campaign goal. The organization

#7

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET www.deq.state.mi.us

RUSSELL J. HARDING, Director

JUN 26 20

REPLY TO

SURFACE WATER QUALITY DIVISION
KNAPPS CENTRE
PO BOX 30273
LANSING MI 48909-7773

June 25, 2001

CERTIFIED MAIL -- 7000 0520 0016 5014 0151

Field Container Corporation
Michigan Carton & Paperboard Company
79 East Fountain Street
Battle Creek, Michigan 49017

Dear Sir or Madam:

SUBJECT: NPDES Permit No. MI0001341
Mich Carton & Paperboard Co, 79 East Fountain Street, Battle Creek

Your National Pollutant Discharge Elimination System (NPDES) Permit has been processed in accordance with appropriate state and federal regulations. It contains the requirements necessary for you to comply with state and federal water pollution control laws.

REVIEW THE PERMIT EFFLUENT LIMITS AND COMPLIANCE SCHEDULES CAREFULLY. These are subject to the criminal and civil enforcement provisions of both state and federal law. Permit violations are audited by the Michigan Department of Environmental Quality and the United States Environmental Protection Agency and may appear in a published quarterly noncompliance report made available to agencies and the public.

Your monitoring and reporting responsibilities must be complied with in accordance with this permit. If applicable, Discharge Monitoring Report forms will be transmitted to you in the near future. These reports are to be submitted monthly or otherwise as required by your NPDES permit.

Any reports, notifications, or questions regarding the attached permit or NPDES program should be directed to the following address:

Mr. Frederick Morley, District Supervisor
Kalamazoo District Office, SWQD, DEQ
7953 Adobe Road
Kalamazoo, Michigan 49009-5026
Telephone: 616-567-3500

Sincerely,

William E. McCracken

William E. McCracken, P.E.
Chief, Permits Section
Surface Water Quality Division
517-373-8088

Attachment: Permit
cc: EPA-Region 5
208 Agency - Southcentral Michigan Planning Council
Mr. Frederick Morley, Kalamazoo District Supervisor, SWQD (2)
PCS Unit, SWQD
Point Source Studies (Grand Rapids District Office), SWQD
Files

PERMIT NO MI0001341

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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 "Federal Act"), Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Parts 31 and 41, and Michigan Executive Orders 1991-31, 1995-4 and 1995-18,

Field Container Corporation
Michigan Carton & Paperboard Company
79 East Fountain Street
Battle Creek, Michigan 49017

is authorized to discharge from a acility located at

79 East Fountain Street
Battle Creek, Michigan 49017

designated as Mich Carton & Paperboard Co

to the receiving waters name the Kalamazoo River in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit

This permit takes effect on August 1, 2001 Any person who is aggrieved by this permit may file a sworn petition with the Office of Administrative Hearings of the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge The Department may reject any petition filed more than 60 days after issuance as being untimely If any condition of this permit is administratively challenged, the entire challenged permit is stayed and the previous permit will remain in effect until the Department takes final action after the Administrative Hearing

This permit and the authorization to discharge shall expire at midnight, October 1, 2005 In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information and forms as are required by the Michigan Department of Environmental Quality to the Kalamazoo District Supervisor of the Surface Water Quality Division by April 4, 2005

In accordance with Section 324 3118 of the Michigan Act, the permittee shall make payment of a $200 00 annual storm water fee to the Department, which shall be postmarked no later than March 15 of each year

This permit is based on a complete application submitted January 4, 2001 The provisions of this permit are severable After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules On its effective date this permit shall supersede NPDES Permit No MI0001341, expiring October 1, 2000

Issued June 22, 2001

William E McCracken
Chief, Permits Section
Surface Water Quality Division

PART I

Section A. Effluent Limitations And Monitoring Requirements

1. Final Effluent Limitations, Monitoring Point 001A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of three million two hundred thousand (3,200,000) gallons per day of noncontact cooling water, boiler blowdown, and sand filter backwash, and an unspecified amount of storm water from Monitoring Point 001A through Outfall 001 Outfall 001 discharges to the Kalamazoo River Such discharge shall be limited and monitored by the permittee as specified below

	Maximum Limits for Quantity or Loading			Maximum Limits for Quality or Concentration				
Parameter	Monthly	Daily	Units	Monthly	Daily	Units	Frequency of Analysis	Sample Type
Flow	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Total Suspended Solids	534	800	lbs/day	20	30	mg/l	Weekly	Grab
Total Residual Chlorine **(see Part I.A.1.e)**	---	---	---	---	38	µg/l	Daily	Grab
Outfall Observation	(report)	---	---	---	---	--	Daily	Visual
				Minimum Daily	Maximum Daily			
pH	---	---	---	6 5	9 0	S U	Weekly	Grab

a Narrative Standard
The receiving water shall contain no unnatural turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge

b Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken at Monitoring Point 001A prior to discharge to the Kalamazoo River

c Outfall Observation
Any unusual characteristics of the discharge (i e , unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids or deposits) shall be reported within 24 hours to the Kalamazoo District Supervisor of the Surface Water Quality Division followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition

d Water Treatment Additives
This permit does not authorize the discharge of water additives without approval from the Department Approval of water additives is authorized under separate correspondence Water additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water In the event a permittee proposes to discharge water additives, including an increased discharge concentration of a previously approved water additive, the permittee shall submit a request to the Department for approval See Part I A 2 for information on requesting water treatment additive use

PART I

Section A. Effluent Limitations And Monitoring Requirements

e Total Residual Chlorine
This limitation and monitoring requirement for total residual chlorine shall apply if the permittee adds chlorine or products containing chlorine compounds to the water or wastewater at the facility The Department has determined that because Michigan Carton & Paperboard retains the ability to use water from a municipal source for noncontact cooling water flow augmentation, any discharge of pass-through chlorine from said municipal water source shall be subject to the limitation and monitoring requirement for total residual chlorine The Kalamazoo District Supervisor shall be notified of any discharge events containing municipal water

2. Request for Discharge of Water Treatment Additives

Requests for the discharge of water treatment additives shall be sent to the Great Lakes and Environmental Assessment Section, Surface Water Quality Division, Department of Environmental Quality, P O Box 30273, Lansing, Michigan 48909, with a copy of the request to the Kalamazoo District Supervisor Instructions may be obtained via the internet at *http //www deq state mi us/swq/gleas/docs/wta/wtamemo htm* to submit a request electronically Written approval from the Department to discharge such additives at specified levels shall be obtained prior to discharge by the permittee Additional monitoring and reporting may be required as a condition for the approval to discharge the additive

A request to discharge water additives shall include all of the following water additive usage and discharge information

a Material Safety Data Sheet,

b the proposed water additive discharge concentration,

c the discharge frequency (i e , number of hours per day and number of days per year),

d the monitoring point from which the product is to be discharged,

e the type of removal treatment, if any, that the water additive receives prior to discharge,

f product function (i e microbiocide, flocculant, etc),

g a 48 hour LC_{50} or EC_{50} for a North American freshwater planktonic crustacean (either *Ceriodaphnia sp Daphnia sp , or Simocephalus sp*), and

h the results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323 1057(2) of the Water Quality Standards

Prior to submitting the request, the permittee may contact the Great Lakes and Environmental Assessment Section by telephone at 517-335-4184 or via the internet at *http //www deq state mi us/pub/swq/rule57/WTA/WTAlist doc* to determine if the Department has the product toxicity data required by items *g* and *h* above If the Department has the data, the permittee will not need to submit product toxicity data

3. Intake Screen Backwash, Outfall 001

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge intake screen backwash from outfall 001 to the Kalamazoo River The permittee shall collect and remove debris accumulated on intake trash bars and dispose of such material on land in an appropriate manner

PART I

Section A. Effluent Limitations And Monitoring Requirements

4. Storm Water Pollution Prevention Plan

The permittee is authorized to discharge storm water associated with industrial activities as defined in 40 CFR 122 26(b)(14) These storm water discharges shall be controlled in accordance with the requirements of this special condition The permittee has developed and implemented a Storm Water Pollution Prevention Plan (plan) The permittee shall continue implementation of the plan for maximum control of significant materials (as defined in Part I A 4 1) so that storm water discharges will not cause a violation of the Water Quality Standards The plan shall be routinely reviewed and updated in accordance with the requirements of this Special Condition

a Source Identification
To identify potential sources of significant materials that can enter storm water and subsequently be discharged from the facility, the plan shall, at a minimum, include the following

1) A site map identifying the following buildings and other permanent structures, storage or disposal areas for significant materials, secondary containment structures, storm water discharge outfalls (numbered for reference), location of storm water inlets contributing to each outfall, location of NPDES permitted discharges other than storm water, outlines of the drainage areas contributing to each outfall, structural runoff controls or storm water treatment facilities, areas of vegetation, areas of exposed and/or erodible soils, impervious surfaces (roofs, asphalt, concrete) name and location of receiving water(s), and areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Michigan Act

2) A list of all significant materials that could enter storm water For each material listed, the plan shall include the following descriptions

a) ways in which each type of material has been or has reasonable potential to become exposed to storm water (e g , spillage during handling leaks from pipes, pumps, and vessels, contact with storage piles, waste handling and disposal deposits from dust or overspray, etc),

b) identification of the outfall or outfalls through which the material may be discharged if released,

c) a listing of oil and materials on the Critical Materials Register that have been spilled or leaked over the three (3) years prior to the completion of the plan, the date, volume and exact location of release, and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state Any release that occurs after the plan has been developed shall be controlled in accordance with the plan and is cause for the plan to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss, and

d) a summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges associated with industrial activity at the facility This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected

3) An evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities loading, unloading, and other material handling operations, outdoor storage, including secondary containment structures, outdoor manufacturing or processing activities, significant dust or particulate generating processes, discharge from vents, stacks and air emission controls, on-site waste disposal practices, maintenance and cleaning of vehicles, machines and equipment, sites of exposed and/or erodible soil, sites of environmental contamination listed under Part 201 (Environmental Response) of the Michigan Act, areas of significant material residue, and other areas where storm water may contact significant materials

PART I

Section A. Effluent Limitations And Monitoring Requirements

b Preventive Measures and Source Controls, Non-Structural
To prevent significant materials from contacting storm water at the source, the plan shall, at a minimum, include the following non structural controls

1) Description of a program for routine preventive maintenance which includes requirements for inspection and maintenance of storm water management and control devices (e g , cleaning of oil/water separators and catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters A log of the inspection and corrective actions shall be maintained on file by the permittee, and shall be retained in accordance with Part I A 4 f

2) A schedule for comprehensive site inspection to include visual inspection of equipment, plant areas, and structural pollution prevention and treatment controls to be performed at least once every six (6) months A report of the results of the comprehensive site inspection shall be prepared and retained in accordance with Part I A 4 f The report shall identify any incidents of non-compliance with the plan If there are no reportable incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this plan

3) A description of good housekeeping procedures to maintain a clean, orderly facility

4) A description of material handling procedures and storage requirements for significant materials Equipment and procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel The procedures shall identify measures to prevent the spilled materials from being discharged into storm water The plan may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 323 1151 through 323 1169 of the Michigan Administrative Code), a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the Michigan Act, or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112

5) Identification of areas that, due to topography, activities, or other factors have a high potential for significant soil erosion The plan shall also identify measures used to control soil erosion and sedimentation

6) A description of employee training programs which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the plan The plan shall identify periodic dates for such training

7) Identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls

c Structural Controls for Prevention and Treatment
Where implementation of the measures required by Part I A 4 b does not control storm water discharges in accordance with Water Quality Standards in Part I A 4 h , the plan shall provide a description of the location, function, and design criteria of structural controls for prevention and treatment Structural controls may be necessary

1) to prevent uncontaminated storm water from contacting or being contacted by significant materials, and/or

2) if preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water Structural controls shall be used to treat, divert, isolate, recycle, reuse or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards in accordance with Part I A 4 h

d Keeping Plans Current
1) The permittee shall review the plan on or before June 1st of each year, and maintain written summaries of the reviews Based on the review, the permittee shall amend the plan as needed to ensure continued compliance with the terms and conditions of this permit

PART I

Section A. Effluent Limitations And Monitoring Requirements

2) The plan shall also be updated or amended whenever changes or spills at the facility increase or have the potential to increase the exposure of significant materials to storm water, or when the plan is determined by the permittee or the Kalamazoo District Supervisor of the Surface Water Quality Division to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity Updates based on increased activity at the facility shall include a description of how the permittee intends to control any new sources of significant materials or respond to and prevent spills in accordance with the requirements of Parts I A 4 a , I A 4 b , and I A 4 c

3) The Kalamazoo District Supervisor or authorized representative may notify the permittee at any time that the plan does not meet minimum requirements Such notification shall identify why the plan does not meet minimum requirements The permittee shall make the required changes to the plan within 30 days after such notification from the Kalamazoo District Supervisor or authorized representative, and shall submit to the Kalamazoo District Supervisor a written certification that the requested changes have been made

e Certified Storm Water Operator Update
If the certified operator has changed or an additional certified storm water operator is added, the permittee shall provide the name and certification number of the new operator to the Kalamazoo District Supervisor The new operator shall review and sign the plan

f Signature and Plan Review
1) The plan shall be signed by the certified storm water operator and by either the permittee or an authorized representative in accordance with 40 CFR 122 22 The plan shall be retained on site of the facility that generates the storm water discharge

2) The permittee shall make plans reports, log books runoff quality data, and supporting documents available upon request to the Kalamazoo District Supervisor of the Surface Water Quality Division or authorized representative

g Record Keeping
The permittee shall maintain records of all inspection and maintenance activities Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff All such records shall be retained for three (3) years

h Water Quality Standards
At the time of discharge, there shall be no violation of the Water Quality Standards in the receiving waters as a result of this discharge This requirement includes, but is not limited to, the following conditions

1) In accordance with Rule 323 1050 of the Water Quality Standards, the receiving waters shall not have any of the following unnatural physical properties in quantities which are or may become injurious to any designated use unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge

2) Any unusual characteristics of the discharge (i e , unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Kalamazoo District Supervisor of the Surface Water Quality Division followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition

i Significant Materials
Significant Materials means any material which could degrade or impair water quality, including but not limited to raw materials, fuels, salt, solvents, detergents, plastic pellets, finished materials such as metallic products, raw materials used in food processing or production, hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372 65), any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA), any material on the Critical Materials Register pursuant to Section 3111 of the Michigan Act, Hazardous Wastes as defined in Part 111 of the Michigan Act, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges

PART I

Section A. Effluent Limitations And Monitoring Requirements

J Prohibition of Non-storm Water Discharges
Discharges of material other than storm water shall be in compliance with an NPDES permit issued for the discharge Storm water shall be defined to include the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the plan discharges from fire hydrant flushing, potable water sources including water line flushing, fire system test water, irrigation drainage, lawn watering, routine building wash down which does not use detergents or other compounds, pavement wash water where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material have been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated groundwater, and foundation or footing drains where flows are not contaminated with process materials such as solvents Discharges from fire fighting activities are authorized by this permit, but do not have to be identified in the plan

Preventing Pollution is the Best Solution

The Michigan Department of Environmental Quality (DEQ) encourages you to consider pollution prevention alternatives In some cases pollution prevention may allow you to avoid the need to discharge pollutants which would otherwise require permit limitations -- or even avoid the need for permits altogether! Pollution prevention can

- ☑ Save Money
- ☑ Reduce Waste
- ☑ Aid Permit Compliance
- ☑ Protect Our Environment
- ☑ Improve Corporate Image
- ☑ Reduce Liability

The DEQ is helping Michigan's industries save money, reduce waste and protect our environment through pollution prevention DEQ staff can provide pollution prevention assistance through telephone consultations, technical workshops and seminars, and informational publications They can also put you directly in touch with local support networks and national pollution prevention resources For more information, contact the Michigan Department of Environmental Quality, Environmental Assistance Division, at 1-800-662 9278 or visit our homepage at http //www deq state mi us

PART II

Section A. Definitions

This list of definitions may include terms not applicable to this permit

Acute toxic unit (TU_a) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation The human health bioaccumulation factor shall be derived according to R 323 1057(5) Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF) The BCCs to which these rules apply are identified in Table 5 of R 323 1057 of the Water Quality Standards

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works This includes, but is not limited to, scum or solids removed in primary, secondary or advanced wastewater treatment processes and a derivative of the removed scum or solids

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden

Chronic toxic unit (TU_c) means 100/MATC or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium

Class B Biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen) When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs)

For pH, report the maximum value of any individual sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any individual sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs For dissolved oxygen, report the minimum concentration of any individual sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs

Daily loading is the total discharge by weight of a parameter discharged during any calendar day This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor The daily loading will be used to determine compliance with any maximum daily loading limitations When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs

Department means the Michigan Department of Environmental Quality.

Detection Level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability

District Supervisor: The Kalamazoo District Supervisor of the Surface Water Quality Division is located at the Kalamazoo District Office-DEQ, Surface Water Quality Division, 7953 Adobe Road, Kalamazoo, Michigan 49009-5026, telephone 616-567-3500 (fax 616-567-9440)

PART II

Section A. Definitions

Division of Health Facility Services -- Health Facility Evaluation Section, Michigan Department of Consumer and Industry Services mailing address is P O Box 30195, Lansing, Michigan 48909

Drinking Water and Radiological Protection Division -- Environmental Health, Michigan Department of Environmental Quality mailing address is P O Box 30630, Lansing, Michigan 48909-8130

EC_{50} means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions

Fecal coliform bacteria monthly is the geometric mean of the samples collected in a calendar month (or 30 consecutive days) The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs

Fecal coliform bacteria 7-day is the geometric mean of the samples collected in any 7-day period The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs

Flow Proportioned sample is a composite sample with the sample volume proportional to the effluent flow

Grab sample is a single sample taken at neither a set time nor flow

IC_{25} means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal, and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations) Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act [This definition does not apply to sample matrix interference]

Land Application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil

LC_{50} means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence

Monthly concentration is the sum of the daily concentrations determined during a reporting month (or 30 consecutive days) divided by the number of daily concentrations determined The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMRs

PART II

Section A. Definitions

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined in the reporting month (or 30 consecutive days) The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMRs

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act The standards establish nationwide limits for specific industrial categories for discharge to a POTW

NOAEL means the highest tested dose or concentration of a substance that results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect

Noncontact Cooling Water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category

POTW is a publicly owned treatment works

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant

Regional Administrator is the Region 5 Administrator, U S EPA, located at R-19J, 77 W Jackson Blvd , Chicago, Illinois 60604

7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs

7-day loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during any 7 consecutive days in a reporting month The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs

PART II

Section A. Definitions

Significant industrial user is a nondomestic user that 1) is subject to Categorical Pretreatment Standards under 40 CFR 403 6 and 40 CFR Chapter I, Subchapter N, or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater), contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant, or is designated as such by the permittee as defined in 40 CFR 403 12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403 8(f)(6))

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323 1057 of the Water Quality Standards using a tier I toxicity database

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323 1057 of the Water Quality Standards using a tier II toxicity database

Toxicity Reduction Evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of Act No 451 of the Public Acts of 1994, as amended, being Rules 323 1041 through 323 1117 of the Michigan Administrative Code

3-Portion Composite sample is a sample consisting of three equal volume grab samples collected at equal intervals over an 8-hour period

24-Hour Composite sample is a flow proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants) For parameters not specified in the permit or covered by the regulations, test procedures shall be submitted for approval to the Kalamazoo District Supervisor of the Surface Water Quality Division

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information 1) the exact place, date, and time of measurement or sampling, 2) the person(s) who performed the measurement or sample collection, 3) the dates the analyses were performed, 4) the person(s) who performed the analyses, 5) the analytical techniques or methods used, 6) the date of and person responsible for equipment calibration, and 7) the results of all required analyses

5. 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 Department of Environmental Quality

PART II

Section C. Reporting Requirements

1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Kalamazoo District Supervisor of the Surface Water Quality Division within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge

2. Submittal Requirements for Self-Monitoring Data

Unless instructed on the effluent limits page to conduct "retained self-monitoring," the permittee shall submit self-monitoring data on the Environmental Protection Agency's Discharge Monitoring Report (DMR) forms (monthly summary information) and the Department's Daily Discharge Monitoring Report forms (daily information) to PCS-Data Entry, Surface Water Quality Division, Michigan Department of Environmental Quality, P O Box 30273, Lansing, Michigan, 48909-7773 for each calendar month of the authorized discharge period(s) The forms shall be postmarked no later than the 10th day of the month following each month of the authorized discharge period(s)

Alternative Daily Discharge Monitoring Report formats may be used if they provide equivalent reporting details and are approved by the Kalamazoo District Supervisor of the Surface Water Quality Division For information on electronic submittal of this information, contact the Kalamazoo District Supervisor

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page to conduct retained self monitoring the permittee shall maintain a year-to date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Surface Water Quality Division, Michigan Department of Environmental Quality (in the case of Type I or Type II public water supplies, mobile home parks, campgrounds, and marinas to the staff of the Drinking Water and Radiological Protection Division -- Environmental Health, Michigan Department of Environmental Quality, or, in the case of hospitals, nursing homes and extended care facilities, to the staff of the Division of Health Facility Services -- Health Facility Evaluation Section, Michigan Department of Consumer and Industry Services) Retained self-monitoring results are public information and shall be promptly provided to the public upon request

The permittee shall certify, in writing, to the Kalamazoo District Supervisor of the Surface Water Quality Division, on or before January 10th of each year, that 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained, and 2) the application on which this permit is based still accurately describes the discharge

4. 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 Discharge Monitoring Report Such increased frequency shall also be indicated

Monitoring required pursuant to Part 41 of the Michigan Act or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Kalamazoo District Supervisor of the Surface Water Quality Division indicating whether or not the particular requirement was accomplished If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required

PART II

Section C. Reporting Requirements

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required All instances of noncompliance shall be reported as follows

a 24-hour reporting - Any noncompliance which may endanger health or the environment (including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance A written submission shall also be provided within five (5) days

b other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a above at the time monitoring reports are submitted, or, in the case of retained self-monitoring within five (5) days from the time the permittee becomes aware of the noncompliance

Written reporting shall include 1) a description of the discharge and cause of noncompliance, and 2) the period of noncompliance, including exact dates and times, or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge

7. Spill Notification

The permittee shall immediately report any spill or loss of any product, by-product, intermediate product, oils, solvents, waste material, or any other polluting substance which occurs to the surface waters or groundwaters of the state by calling the Kalamazoo District Supervisor of the Surface Water Quality Division at 616-567-3500, or if the notice is provided after regular working hours call the Department of Environmental Quality's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660), and within ten (10) days of the spill or loss, the permittee shall submit to the Kalamazoo District Supervisor of the Surface Water Quality Division a full written explanation as to the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken, and schedule of implementation

8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Kalamazoo District Supervisor of the Surface Water Quality Division by telephone within 24-hours of becoming aware of such conditions, and within five (5) days, provide in writing, the following information

a that an upset occurred and that the permittee can identify the specific cause(s) of the upset,

b that the permitted wastewater treatment facility was, at the time, being properly operated, and

c that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof

PART II

Section C. Reporting Requirements

9. Bypass Prohibition and Notification

a Bypass Prohibition - Bypass is prohibited unless

1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage,

2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, and

3) the permittee submitted notices as required under 9 b or 9 c below

b Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Kalamazoo District Supervisor of the Surface Water Quality Division, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Kalamazoo District Supervisor The Kalamazoo District Supervisor may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9 a above

c Notice of Unanticipated Bypass - The permittee shall submit notice to the Kalamazoo District Supervisor of the Surface Water Quality Division of an unanticipated bypass by telephone at 616-567-3500 (if the notice is provided after regular working hours, use the following number 1-800-292 4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances

d Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Kalamazoo District Supervisor of the Surface Water Quality Division, and at additional times as directed by the Kalamazoo District Supervisor The written submission shall contain a description of the bypass and its cause, the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue, steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass, and other information as required by the Kalamazoo District Supervisor

e Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation These bypasses are not subject to the provisions of 9 a , 9 b , 9 c , and 9 d , above This provision does not relieve the permittee of any notification responsibilities under Part II C 10 of this permit

f Definitions

1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility

2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass Severe property damage does not mean economic loss caused by delays in production

PART II

Section C. Reporting Requirements

10. Notification of Changes in Discharge

The permittee shall notify the Kalamazoo District Supervisor of the Surface Water Quality Division, in writing, within 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122 21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132 6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels, 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information, or 3) any chemical at levels greater than five times the average level reported in the complete application submitted on January 4, 2001 Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules

11. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Kalamazoo District Supervisor of the Surface Water Quality Division by a) submission of an increased use request (application) and all information required under Rule 323 1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit, 2) the action or activity will not result in violations of the effluent limitations specified in this permit, 3) the action or activity is not prohibited by the requirements of Part II C 12 , and 4) the action or activity will not require notification pursuant to Part II C 10 Following such notice, the permit may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited

12. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of Rules 323 1098 and 323 1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, 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 Kalamazoo District Supervisor of the Surface Water Quality Division 30 days prior to the actual transfer of ownership or control

PART II

Section D. Management Responsibilities

1. Duty to Comply

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

It is the duty of the permittee to comply with all the terms and conditions of this permit Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the Michigan Act and/or the Federal Act and constitutes grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or denial of an application for permit renewal

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Michigan Department of Environmental Quality, as required by Sections 3110 and 4104 of the Michigan Act

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either

a provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, 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

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance

6. Containment Facilities

The permittee shall provide 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 Part 5 Rules (Rules 323 1151 through 323 1169 of the Michigan Administrative Code) For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the Michigan Act

PART II

Section D. Management Responsibilities

7. Waste Treatment Residues

Residuals (i e solids, sludges, biosolids, filter backwash, scrubber water, ash, grit or other pollutants) removed from or resulting from treatment or control of wastewaters, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules These laws may include, but are not limited to, the Michigan Act, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state

8. Treatment System Closure

In the event that discharges from a treatment system are planned to be eliminated, the permittee shall submit a closure plan to the Kalamazoo District Supervisor for approval The closure plan shall include characterization of any wastewater and residuals which will remain on-site after the discharges are eliminated, along with disposal methods, proposed schedule, and any other relevant information as required by the Kalamazoo District Supervisor Closure activities involving waste treatment residuals shall be consistent with Part II D 7 of this permit

The permittee shall implement the closure activities in accordance with the approved plan Any wastewater or residual disposal inconsistent with the approved plan shall be considered a violation of this permit After proper closure of the treatment system, this permit may be terminated

9. Right of Entry

The permittee shall allow the Michigan Department of Environmental Quality, any agent appointed by the Department or the Regional Administrator, upon the presentation of 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 process facilities, treatment works, monitoring methods and equipment regulated or required under this permit, and to sample any discharge of pollutants

10. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (Rule 323 2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the Regional Administrator As required by the Federal 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 Federal Act and Sections 3112, 3115, 4106 and 4110 of the Michigan Act

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

Department of Environmental Quality
Surface Water Quality Division
Plainwell District Office
1342 SR 89 W, Suite B
Plainwell, MI 49080-1915

March 31, 2000

Dear DEQ:

Enclosed please find my application for reissuance of NPDES Permit No. MI0001341. Since issuance of the previous permit Michigan Paperboard has made improvements to water systems, improving water quality and measuring storm water which have led to permit change needs.

Michigan Paperboard Company has eliminated the use of chlorine as a water treatment aid and eliminated all sources of Municipal water from the non-contact cooling effluent. Our previous permit requirements called for daily testing of Total Residual Chlorine which is currently tested by an outside contract lab and is very costly. Based on 1999 data, we feel that this monitoring frequency should be reduced.

Also, since issuance of the last permit, Michigan Paperboard has installed a parshall flume-measuring device to monitor the outfall flow to the river. This monitoring has showed higher outfall flows than previously estimated for our facility and storm water runnoff. The monitoring system is not fail-save and indicates that the outfall flow is higher than our facility intake plus stormwater. At the time of this application, the issue is under investigation.

All other data in the application is accurate based on information that we have at hand. The outfall does contain strom water which will cause the flow to elevate during storm occurances; thus I have asked for an increase in the permitted daily discharge maximum. The normal non-contact cooling water discharge has not changed but was not previously measured using a measuring device.

For questions concerning this application, please feel free to contact me at the above telephone number. My extension is 276.

Sincerely,

Barbara Russell
Technical Superintendent

ISO 9002

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION I - General Information

(This information is required by the Part 21 Rules of Michigan Act 451, Public Acts of 1994, as amended, Part 31 A municipality, business, or industry which violates the Part 21 Rules may be enjoined by action commenced by the Attorney General in a court of competent jurisdiction)

See the facing page for instructions on completing pages 1 & 2

DEQ USE ONLY	
Permit ID #	Supplication #

PLEASE TYPE OR PRINT

Where addresses are duplicate you may indicate so (e.g. facility address is the same as the application mailing address).

1 NPDES PERMIT or COC NUMBER: MI0001341

2. APPLICANT ADDRESS

Company Name: FIELD CONTAINER CORP, LP
MICHIGAN PAPERBOARD CO.
Street Address or P O Box: 79 EAST FOUNTAIN ST.
City: BATTLE CREEK State: MI ZIP Code: 49017
Telephone (with area code): 616-963-4004 FAX (with area code): 616-963-1306
e-mail address: N/A

3. APPLICATION CONTACT

Contact Name: MARK REED
MICHIGAN PAPERBOARD
Street Address or P O Box: SAME AS 2
City: State: ZIP Code:
Telephone (with area code): FAX (with area code):
e mail address:

4 FACILITY MAILING ADDRESS

Facility Name: MICHIGAN PAPERBOARD
Street Address or P O Box: SAME AS 2
City: State: ZIP Code:
Telephone (with area code): FAX (with area code):
e-mail address:

5. FACILITY CONTACT

Contact Name: BARBARA RUSSELL
MICHIGAN PAPERBOARD
Street Address or P O Box: SAME AS 2
City: State: ZIP Code:
Telephone (with area code): FAX (with area code): 616-963-4425
e-mail address: russelbs@fieldcontainer.com

6. FACILITY LOCATION ADDRESS

Facility Name: SAME AS 2.
Street Address:
City: State: ZIP Code:
Telephone (with area code): FAX (with area code):
e-mail address:

7 DISCHRGE MONITORING REPORTS

Contact Name: JAMES HOSKINS
MICHIGAN PAPERBOARD
Street Address or P O Box: SAME AS 2
City: State: ZIP Code:
Telephone (with area code): FAX (with area code): 616-963-4425
e-mail address:

8. BIOSOLIDS BILLING

Contact Name: N/A
Street Address or P O Box:
City: State: ZIP Code:
Telephone (with area code): FAX (with area code):
e-mail address:

9. STORM WATER BILLING

Contact Name: N/A
Street Address or P O Box:
City: State: ZIP Code:
Telephone (with area code): FAX (with area code):
e-mail address:

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION I - General Information

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER
MICHIGAN PAPERBOARD CO.	MI0001341

10 PERMIT ACTION REQUESTED (Check one box only) (see instructions page iv)

- ☐ **NEW**, proposed discharge ("New Use" OR an "Existing" discharge currently unpermitted)
- ☑ **REISSUANCE** of current permit
  - ☐ Check here if the permit reissuance proposes an increased loading of pollutants to the receiving water ("Increased Use") Attach a description of the proposed "increased use"
- ☐ **MODIFICATION** of current permit
  - ☐ Check here if the request includes an increased loading of pollutants to the receiving water ("Increased Use") Attach a description of the proposed modification
- ☐ **GENERAL PERMIT COVERAGE** Check here if you wish to be considered for coverage under a general permit (see appendix Table 10)
  - ☐ Check here if you are applying to land apply biosolids in Michigan Out of state and Groundwater discharger's see instructions on page iv

11 RULE 1098 DEMONSTRATION (see instructions page iv)

In accordance with Rule 323 1098 of the Part 4 Rules, the permittee must submit a Rule 323 1098 Demonstration for any new or increased loading of pollutants to the surface waters of the state Has the "New", "Existing Unpermitted", "Reissuance" (with increased use) or "Modification (with increased use) box in question 10 above, been checked? (see appendix for information)

- ☐ Yes, Submit a Rule 323 1098 demonstration (refer to Rule 323 1098, page 4 in the appendix for instructions) Questions should be directed to the appropriate district office (see page 2 and 3 in the appendix)
- ☑ No, Continue with Item 12

12 ADDITIONAL FACILITY LOCATION INFORMATION (see instructions on page iv)

A County / Township	County CALHOUN			Township BATTLE CREEK	
B State Planar Coordinates	NW ¼, ¼	NE ¼	Section 12	Town 2S	Range 8W
C Latitude / Longitude (to the nearest 15 seconds)	Latitude			Longitude	

13 CERTIFIED OPERATOR (see instructions on page iv)

Does the facility have a certified operator? (Yes) No

Operator's Name JAMES M. HOSKING

Certification Number 2444

Certification Classification(s) A-1h

14 OTHER ENVIRONMENTAL PERMITS

Provide the information requested below for any other federal, state or local environmental permits in effect or applied for at the time of submittal of this application form, including, but not limited to, permits issued under any of the following programs Air Pollution Control, Hazardous Waste Management, Wetlands Protection, Soil Erosion and Sedimentation Control, and other NPDES permits Include any additional information on 8 1/2" x 11" paper as an attachment to this application

Issuing Agency	Permit or COC Number	Permit Type
N/A		

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION I - General Information

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER
MICHIGAN PAPERBOARD CO	MI0001341

15 WATER FLOW DIAGRAM AND NARRATIVE DESCRIPTION

Provide a flow diagram (using 8 1/2" x 11" paper **if possible**) showing the wastewater flow through the facility including all treatment units processes and bypass piping, and a narrative description of the water flow through the facility from intake to discharge Show all operations contributing wastewater and the locations of flow meters, chemical feeds and discharge points The water balance shall show daily average flow rates at intake and discharge points and approximate daily flow rates between treatment units including influent and treatment rates Use actual measurements whenever available, otherwise use your best estimate Show all significant losses of water to products, atmosphere and discharge

Municipal Facilities - Include a narrative that briefly describes the history of the wastewater treatment facility Include information describing when it was first constructed, what improvements have been made, future plans for upgrade, and other pertinent information

Industrial and Commercial Facilities - The line diagram shall include all operations contributing wastewater including process and production areas, sanitary flows, cooling water and storm water runoff **Include a narrative** which provides a brief description of the manufacturing processes

ATTACH THIS INFORMATION TO THIS APPLICATION PLEASE DO NOT BIND THIS INFORMATION

16 MAP OF FACILITY AND DISCHARGE LOCATION

Provide a detailed map on 8 1/2" x 11" paper showing the location of the existing or proposed facility, wastewater and biosolid treatment system(s), and wastewater discharge points into receiving waters (including bypasses) Include the exact location of the wastewater discharge point(s) and all areas through which the discharge flows (e g wetlands, open drains, storm sewers), if applicable, between the discharge point and the receiving water If the discharge is to a storm sewer, label the storm sewer and show its flow path to the receiving water Also include the location of any water supply wells and groundwater monitoring wells This map shall be a United States Geological Survey Quadrangle (7 5 minute series) or other map of comparable detail, scale and quality (which shows surface waterbodies, roads, and other pertinent landmarks) The minimum area this map shall encompass is approximately one mile beyond property boundaries

ATTACH THIS INFORMATION TO THIS APPLICATION

17 LIST ADJACENT PROPERTY OWNERS

List the names and addresses of all property owners adjacent to the facility, treatment systems, and discharge locations List this information in the space provided below or include the information as an attachment on 8 1/2" x 11" paper If additional space is necessary, copy this blank page and attach this information to this application

Name	Address	City	State	ZIP Code
WALT ENDRZEJENSKI ECONO LODGE	165 CAPITAL SW AVE	BATTLE CREEK	MI	49015
SOAPY'S CAR WASH	45 LIBERTY ST	BATTLE CREEK	MI	49017
CANADIAN NATIONAL R.R.	105 HAMPTON	BATTLE CREEK	MI	49014
KELLOGGS, INC	235 CAPITAL SW AVE	BATTLE CREEK	MI	49015

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION I - General Information

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER
MICHIGAN PAPERBOARD CO.	M1000 1341

18 ALTERNATE POWER SOURCE

If you are applying for a New or Existing Unpermitted discharge, continue to Section II or Section III.

Applicants with an approved Alternate Power Source Report shall indicate any changes that have been made to the alternate power source serving the facility in the past five years. Submit the new information with the application and provide specific information regarding the appropriate pump station or treatment unit the alternate power source serves.

A. Indicate if the facility has a back-up source of power and if emergency procedures have been developed in case of a power outage to the facility

☐ Yes, Continue to B. ☐ No. ☒ Not Applicable

B Has an Alternate Power Source Report been approved by the DEQ?

☐ Yes, Continue to C. ☐ No

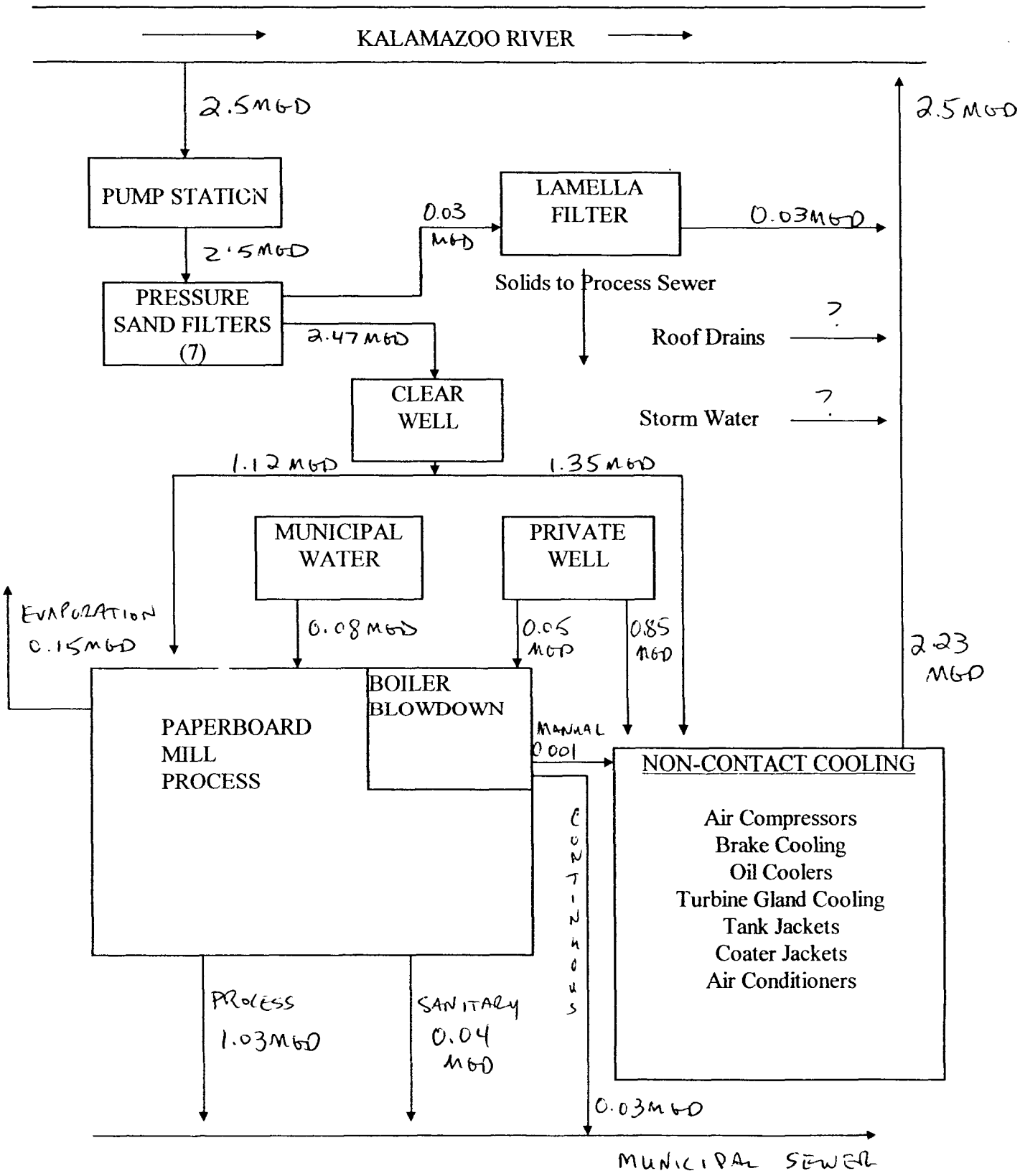
C. Have changes been made that have not been reported to DEQ since the Report was approved?

☐ Yes, Submit the information as an attachment to this application. ☐ No.

This completes Section I. Facilities requesting authorization to only discharge sanitary wastewaters continue with Section II. Other facilities requesting authorization to discharge wastewater continue with Section III. Section I shall be accompanied by either Section II or Section III of this application. If you need assistance in determining the appropriate Sections to complete, contact the district office (see Pages 2 and 3 in the appendix for district office addresses and a map of district boundaries).

Facility Name: Michigan Paperboard Company Permit No.: MI0001341

Section I - General Information
Item 15 Water Flow Diagram



Section I - General Information
Item 15 Narrative Description

Surface water intake from the Kalamazoo River and private well water are both used as non-contact cooling water. River water is used as the primary source of water with the well water being the back-up and supplemental source.

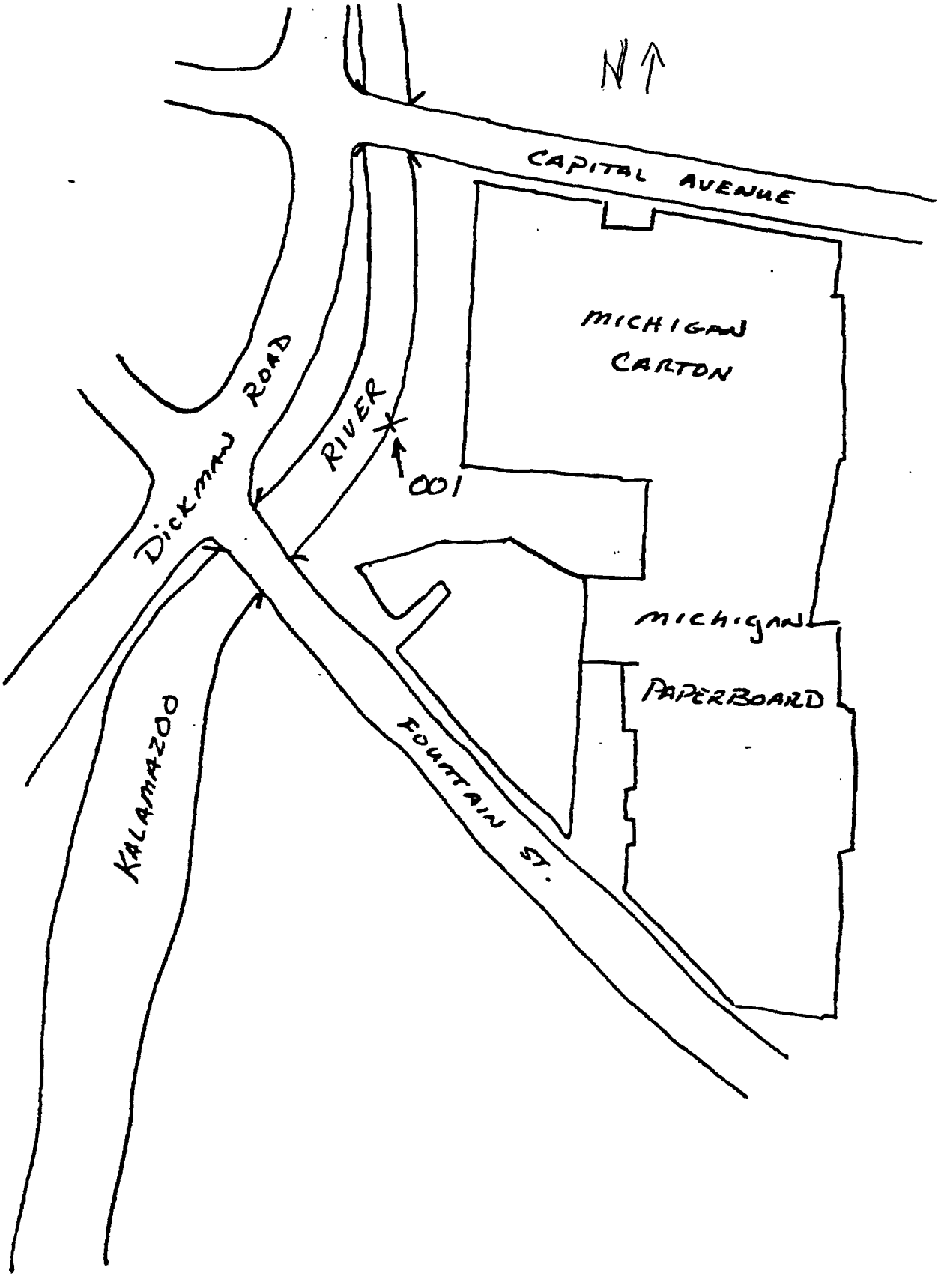
Non-contact cooling water from the Kalamazoo River is treated prior to use in the plant with pressure sand filters. Screened backwash from these filters is discharged back to the non-contact cooling stream.

Continuous boiler blowdown is discharged to the process effluent, which enters the Municipal outfall; however, daily manual blowdown is discharged to the non-contact cooling stream.

Storm water runoff from the roof drains and side lot also enter the non-contact cooling outfall.

Non-contact cooling water is used for cooling of air compressors, brake cooling, oil coolers, turbine gland cooling, tank jackets, coater jackets and air conditioners.

Section I - General Information
Item 16 Map of Facility and Discharge Location



Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

A. Facility Information

Section III is to be completed by all facilities classified as Industrial or Commercial facilities Industrial and Commercial facilities include facilities that discharge or propose to discharge a wastewater generated by a production process or service provided or through a remediation project Municipal and public facilities are not required to complete Section III (unless requesting authorization for discharges other than sanitary wastewater)

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER
MICHIGAN PAPERBOARD CO.	MI0001341

1 BUSINESS INFORMATION

A Provide up to four (4) Standard Industrial Classification (SIC) codes, in order of economic importance which best describe the major products or services provided by this facility

1	2	3	4
2631			

B Indicate if this facility is a primary industry (refer to Table 2 in the appendix to determine if this facility is a primary industry)

☒ Yes, This facility is a primary industry Indicate the primary industry as identified in Table 2 in the appendix Pulp, Paper, + Paperboard Mills

☐ No, This facility is not a primary industry, continue with Item C

C Do you operate a concentrated animal feeding operation or an aquatic animal production facility?

☐ Yes, Contact the appropriate district office (see Pages 2 and 3 in the appendix)

☒ No, Continue below.

2 WATER SUPPLY AND DISCHARGE TYPE

A List all water sources and provide average flows The volume may be estimated from water supply meter readings, pump capacities, etc Provide the name of the source where appropriate (i e , Grand River, Lake Michigan, City of Millpond) The units are as follows MGD (million gallons per day), MGY (million gallons per year), GPD (gallons per day) If you are reporting in another unit, select the box with the blank following it and provide the units in the underlined area If necessary, provide a written description as an attachment on 8 1/2" x 11" paper

	Name of Source	Average Volume or Flow Rate	Indicate Units
Municipal Supply			☐MGD ☐GPD ☐MGY ☐____
Surface Water Intake	KALAMAZOO RIVER	2.5	☒MGD ☐GPD ☐MGY ☐____
Private Well	MPC	0.9	☒MGD ☐GPD ☐MGY ☐____
Other (specify)			☐MGD ☐GPD ☐MGY ☐____

B Identify water discharged by the facility and provide average flows If water is first used for one purpose and then is subsequently used for another purpose, indicate the type and amount of the last use For example, if water is initially used for noncontact cooling water and then for process water, indicate the amount of process water The amount of water from sources should approximate the amount of water usage If they are different, provide an explanation

	Average Flow Rate	Indicate Units		Average Flow Rate	Indicate Units
Process Wastewater		☐MGD ☐GPD ☐MGY ☐____	Sanitary Wastewater		☐MGD ☐GPD ☐MGY ☐____
Contact Cooling		☐MGD ☐GPD ☐MGY ☐____	Regulated Storm Water		☐MGD ☐GPD ☐MGY ☐____
Noncontact Cooling	2.5	☒MGD ☐GPD ☐MGY ☐____	HPTW		☐MGD ☐GPD ☐MGY ☐____
GWCU		☐MGD ☐GPD ☐MGY ☐____	Other (Specify)		☐MGD ☐GPD ☐MGY ☐____

GWCU - stands for Groundwater Clean-Up

HPTW - stands for Hydrostatic Pressure Test Water

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B Outfall Information

INSTRUCTIONS FOR COMPLETING SECTION III, ITEM 3

This item requires detailed information on the expected and/or measured flows from each outfall at the facility and the location of each outfall Fill in the Outfall Number in the top right hand box, identify the outfall by number, e g , 001, 002, etc (applicants with existing NPDES permits should refer to the facility's current NPDES permit for outfall numbers identification)

A WATERSHED Identify the receiving stream's watershed Each receiving stream will eventually discharge into one of the Great Lakes or one of the connecting waters (i e Detroit River, St Mary's River, St Clare River) Indicate from which river the discharge eventually discharges to the Great Lakes For example Sycamore Creek is tributary to the Red Cedar River, which is tributary to the Grand River, which discharges to Lake Michigan Therefore a discharge to the Sycamore Creek is a discharge to the Grand River Watershed

B RECEIVING STREAM Identify the exact location of the wastewater discharge point(s) and all areas through which the discharge flows (e g storm sewers, open drains, wetlands), if applicable, between the discharge point and the receiving water Examples of receiving waters are rivers, creeks, lakes, etc

C COUNTY / TOWNSHIP Provide the county and township where the outfall is located

D STATE PLANAR COORIDINATES Provide the location of the discharge to the receiving water in State Planar Coordinates Report State Planar Coordinates using quarter-quarter section, quarter section, section, town and range (e g , NE 1/4, SE 1/4, Section 34, T1N, R12E)

E LATITUDE / LONGITUDE Provide the latitude and longitude of the discharge to the nearest 15 seconds (e g , Latitude = 42°27'15", Longitude = 83°02'30")

F WASTEWATER TYPES Indicate the type(s) of wastewater the facility is requesting authorization to discharge Check as many types of wastewater as are appropriate for this outfall If a water is used in multiple areas, such as water that is first used for noncontact cooling, and then for another use, such as process water, indicate the final use only

G SEASONAL DISCHARGE If the treatment facility discharges from one to seven days per week throughout the year check **"No"** and continue with Item H If the facility stores wastewater that accumulates throughout the year and discharges it a few weeks or months a year after treatment, check **"Yes"** and enter the dates the facility discharges, (e g , October 15 through November 10)

H DISCHARGE SCHEDULE Provide the average number of hours per day that the facility discharges treated wastewater and the number of days per year that the discharges occur

I EXPECTED OR PROPOSED DISCHARGE FLOW RATES Provide current (from the last twelve months) or expected flow rate information as requested When reporting the Maximum Design Flow Rate, provide the design flow for this specific outfall, (e g , batch treatment system flow, package treatment system flow, or some other finite treatment system flow) Please provide an explanation if "Pollution Prevention" measures are expected to provide flow reductions

J MAXIMUM AUTHORIZED DISCHARGE FLOW Provide the maximum discharge flow rate the facility is requesting authorization to discharge NOTE Discharge flow rates greater than the authorized flow rate are not authorized and constitute a violation of Act 451 of 1994, as amended, Part 31, and are subject to the penalties specified therein Therefore, be sure that the facility's maximum discharge flow rate will not be exceeded

NOTE: The units are as follows: GPD = gallons per day, MGD = millions of gallons per day, MGY = millions of gallons per year.

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

Complete a separate Section III B - Outfall Information (pages 24-30) for each outfall at the facility Make copies of this blank section of the application if necessary

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER	OUTFALL NUMBER
MICHIGAN PAPERBOARD CO.	M1000134 1	001

3 OUTFALL INFORMATION (see page 24 for instruction on completion of this page)

A	Watershed KALAMAZOO RIVER				
B	Receiving Water KALAMAZOO RIVER				
C	County CALHOUN		Township BATTLE CREEK		
D	NW ¼, ¼	NE ¼	Section 12	Town 2S	Range 8W
E	Latitude		Longitude		

F Type of Wastewater Discharged (Check all that apply)

- ☐ Contact Cooling
- ☐ Sanitary Wastewater
- ☐ Storm Water (regulated)
- ☒ Noncontact Cooling
- ☐ Process Wastewater
- ☒ Storm Water (not regulated)
- ☐ Storm water subject to effluent guidelines (indicate under which category) _____
- ☐ Other - specify _____

G Is this a Seasonal Discharge?

☐ Yes, List the discharge periods (by month) in the space provided below ☒ No, Continue with item G

From	Through	From	Through
From	Through	From	Through

H Discharge Schedule (Yearly Average)

24 hours/day	365 days/year

I Expected or Proposed Discharge Flow Rates

Total Yearly	Daily Minimum	Daily Average	Daily Maximum	Maximum Design Flow Rate
908 MGY	0 MGD	2.5 MGD	5.0 MGD	N/A MGD

J The maximum discharge flow rate to be authorized in the permit 5.0 ☐ GPD ☒ MGD ☐ MGY ☐ _____

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

Complete a separate Section III B - Outfall Information (pages 24-30) for each outfall at the facility Make copies of this blank section of the application if necessary

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER	OUTFALL NUMBER
MICHIGAN PAPERBOARD CO.	M1000154 1	001

4 WATER TREATMENT ADDITIVES

A Is there a discharge of any water treatment additives or chemicals used to treat water and/or wastewater used or generated by this facility ?

☐ No Continue with Item 5

☐ Yes, Provide the following information for each additive Provide the Material Safety Data Sheets (MSDS) for each additive as an attachment to this application Enter the product name of the additive and name of the manufacturer Describe the function of the additive, e g , biocide corrosion inhibitor, etc Provide the average and maximum proposed discharge concentrations of the additive Enter the concentrations of the proposed additives after all treatment has occurred If the actual proposed discharge concentrations are not known, an estimate shall be made using stoichiometry and/or a mass balance Provide the proposed discharge frequency in hours per day and days per week or year

Product Name/Name of Manufacturer	Additive Function	Discharge Concentrations Average	Discharge Concentrations Maximum	Discharge Frequency	Discharge Frequency
BALANCE D POLYMER 6304B BETZ/DEARBORN	DISPERSANT IRON CHELANT	☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day *See attached	7 ☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr
		☐µg/l ☐mg/l	☐µg/l ☐mg/l	hours/day	☐days/wk ☐days/yr

B Table 11 contains a list of the additives for which the DEQ currently has sufficient toxicological data to evaluate the discharge of the additive If the additive this facility is proposing to discharge is not included in Table 11in the appendix, call the Surface Water Quality Division, Great Lake and Environmental Assessment Section at 517-335-4184 to inquire about the status of the specific water treatment additive prior to providing any additional information If the DEQ does not have sufficient toxicological information for any additive being proposed for discharge at this facility, the applicant must provide a 48-hour EC50 for a North American planktonic crustacean (Daphnia sp , Ceriodaphnia sp or Simocephalus sp) and the results of a toxicity test for one other North American Freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323 1057(2)(a) of the Part 4 Water Quality Standards The water treatment additive will not be evaluated for discharge authorization unless the appropriate information is attached

☐ Aquatic toxicity data is attached

C If the discharge is treated to remove any of the above additives prior to discharge, indicate which additive the treatment is for and briefly describe the treatment process

Section III - Industrial and Commercial Wastewater
B. Outfall Information
Item 4. Water Treatment Additives

The current water treatment additive is used in the manual boiler blowdown sequence on a daily basis. The blowdown frequency is about 15 seconds and adds approximately 1000 gallons of water with a treatment level of 5 ppm to the non-contact cooling discharge. Based on average discharge volume this would amount to a discharge level of 0.0125 ppm for the blowdown period each day.

BETZ MATERIAL
SAFETY DATA SHEET

EFFECTIVE DATE: 29-AUG-1995
PRINTED DATE: 30-APR-1998

BetzDearborn

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : BALANCED POLYMER 6304B

PRODUCT APPLICATION AREA: WATER BASED INTERNAL BOILER TREATMENT CHEMICAL.

COMPANY ADDRESS:
Betz Laboratories, Inc.
4636 Somerton Road, Trevose, Pa. 19053
Information phone number: (215) - 355-3300

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the OSHA HAZARD COMMUNICATIONS STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
1310-73-2	SODIUM HYDROXIDE (CAUSTIC SODA) Corrosive; toxic (by ingestion)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

CONTINUED

3) HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

WARNING

May cause moderate irritation to the skin. Severe irritant to the eyes. Mists/aerosols cause irritation to the upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Slight; Appearance: Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: Dry chemical, carbon dioxide, foam or water.

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause moderate irritation to the skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
Prolonged or repeated exposures may cause primary irritant dermatitis.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

 CONTINUED

4) FIRST AID MEASURES

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing appartus (full face-piece type).

EXTINGUISHING MEDIA:
Dry chemical, carbon dioxide, foam or water.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:
> 200F P-M(CC)

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7) HANDLING AND STORAGE

HANDLING:
Alkaline. Do not mix with acidic material.

STORAGE:
Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

CONTINUED

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME	EXPOSURE LIMITS
SODIUM HYDROXIDE (CAUSTIC SODA)	
PEL (OSHA):	2 MG/M3
TLV (ACGIH):	2 MG/M3(CEILING)

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Use air-purifying respirators within use limitations associated with the equipment or else use supplied air-respirators. If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:
Rubber gloves. Wash off after each use. Replace as necessary.

EYE PROTECTION:
Splash proof chemical goggles.

9) PHYSICAL AND CHEMICAL PROPERTIES

Specific Grav. (70F)	1.082	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	28.70	Vapor Density (air=1)	< 1.00
Viscosity (cps 70F)	20	% Solubility (water)	100.0

Odor	Slight	
Appearance	Yellow	
Physical State	Liquid	
Flash Point (F)	> 200	P-M(CC)
pH As Is (approx.)	13.3	
Evaporation Rate (Ether=1)	< 1.00	

NA = not applicable ND = not determined

CONTINUED

10) STABILITY AND REACTIVITY

STABILITY:
Stable
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
BETZ INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>5,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>5,000 mg/kg
NOTE - Estimated value	

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY
No Data Available.

BIODEGRADATION

COD (mg/gm):	135 Calculated
TOC (mg/gm):	41 Calculated
BOD-5 (mg/gm):	0 Calculated
BOD-28 (mg/gm):	0 Calculated

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14) TRANSPORT INFORMATION

DOT HAZARD:	Not Applicable
UN / NA NUMBER:	Not applicable
DOT EMERGENCY RESPONSE GUIDE #:	Not applicable

CONTINUED

15) REGULATORY INFORMATION

SCA:
All components of this product are listed in the TSCA inventory.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
5,550 gallons due to SODIUM HYDROXIDE (CAUSTIC SODA);
FOOD AND DRUG ADMINISTRATION:
All ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.
SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic)
SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds
SARA SECTION 313 CHEMICALS:
No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16) OTHER INFORMATION

NFPA/HMIS	CODE TRANSLATION	
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	22-AUG-95	REVISED FORMAT	

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B Outfall Information

INSTRUCTIONS FOR COMPLETING SECTION III, ITEM 6

In accordance with 40 CFR 122 21, all applicants must report $CBOD_5$, Chemical Oxygen Demand, Total Organic Carbon, Total Suspended Solids, Ammonia as N, Temperature (both summer and winter), and pH The applicant may, however, request that reporting of data for one or more of these required parameters be waived Such request must be supported by adequate rational Make such a request an attachment to this application Report available discharge data for the parameters listed Actual data shall be provided for existing discharges, and expected or estimated data provided for proposed discharges Please include an explanation if "Pollution Prevention" is expected to provide reductions of pollutants See Page 12 of the appendix (attached) for a list of specific parameters for which data must be provided for specific types of discharges (e g , noncontact cooling waters, gasoline groundwater cleanups, etc) For assistance in determining the appropriate parameters to report, contact the appropriate district office (see pages 1 and 2 of the appendix)

If data are available for other parameters not listed in Section III,B,6 or in other parts of this application, the applicant shall report these data in the blank spaces provided or attach the information to this application on 8 1/2" x 11" paper

Report all data in the units provided and for the sample types specified in the table If more than one option is available, check the appropriate box The units are as follows µg/l = micrograms per liter, mg/l = milligrams per liter, °F = degrees Fahrenheit, °C = degrees Celsius Pollutant analysis shall be conducted in accordance with requirements in 40 CFR 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants"

To analyze for pH, temperature, total residual chlorine, oil and grease, and fecal coliform use **Grab Samples** unless other frequency-sample type analyses are available To analyze for total BOD_5, total phosphorus, COD, TOC, ammonia nitrogen and total suspended solids use **24-hour composite samples** unless other frequency-sample type analyses are available

For two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls If the request is granted by the district office, on a separate sheet attached to the application form, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled See page ii and iii for sampling definitions, including, "daily concentration", and "monthly concentration"

REPORTING OF INTAKE DATA

Applicants are not required to report intake water data unless they are attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters remaining after treatment which is not removed by the treatment system NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122 45(g)) To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment In addition to the analytical results, the following information shall be submitted for each parameter

a) A statement that the intake water is drawn from the body of water into which the discharge is made If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations

b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed

c) When applicable (for example, when the pollutant represents a class of compounds, e g , BOD_5, TSS, etc), a demonstration of the extent to which the pollutants in the intake vary physically, chemically and biologically from the pollutants contained in the discharge Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

Complete a separate Section III B - Outfall Information (pages 24-30) for each outfall at the facility. Make copies of this blank section of the application if necessary

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER	OUTFALL NUMBER
MICHIGAN PAPERBOARD CO.	MI0001341	001

6 WASTEWATER CHARACTERISTICS - CONVENTIONAL POLLUTANTS - Instructions for completing this page are on the facing page

☐ Check this box if additional information is included as an attachment

Parameter	Maximum Daily Concentration	Maximum Monthly Concentration	Units	Number of Analyses	Sample Type
Biochemical Oxygen Demand - five day (BOD_5)	<2		mg/l	1	☐ Grab ☒ 24 Hr Comp
COD (Chemical oxygen demand)	12		mg/l	1	☐ Grab ☒ 24 Hr Comp
TOC (Total organic carbon)	3.8		mg/l	1	☐ Grab ☒ 24 Hr Comp
Ammonia Nitrogen (as N)	0.1		mg/l	1	☐ Grab ☒ 24 Hr Comp
Total Suspended Solids	18		mg/l	49	☐ Grab ☐ 24 Hr Comp
Total Dissolved Solids	404		mg/l	1	☒ Grab ☐ 24 Hr Comp
Total Phosphorus (as P)	0.23		mg/l		☐ Grab ☐ 24 Hr Comp
Fecal Coliform Bacteria (report geometric means)	~~maximum 7day~~ 5		counts/100ml	1	Grab
Total Residual Chlorine	<0.02		(mg/l) µg/l	48	Grab
Dissolved Oxygen	minimum daily 8.2	**Do Not Use**	mg/l	1	Grab
pH (report maximum and minimum of individual samples)	minimum 7.1	maximum 8.2	Standard Units	48	Grab
Temperature, Summer 5/1 - 10/31	80	56	(°F) °C	24	Grab
Temperature, Winter 11/1 - 4/30	65	44	(°F) °C	24	Grab
Oil & Grease	<5	—	mg/l	1	Grab
					☐ Grab ☐ 24 Hr Comp
					☐ Grab ☐ 24 Hr Comp
					☐ Grab ☐ 24 Hr Comp
					☐ Grab ☐ 24 Hr Comp
					☐ Grab ☐ 24 Hr Comp
					☐ Grab ☐ 24 Hr Comp
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					☐ Grab ☐ 24 Hr Comp

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

Complete a separate Section III B - Outfall Information (pages 24-30) for each outfall at the facility Make copies of this blank section of the application if necessary

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER	OUTFALL NUMBER
MICHIGAN PAPERBOARD	MI0000 1341	001

7 PRIMARY INDUSTRY TOXIC POLLUTANT INFORMATION

Complete this item only if the facility is a primary industry as indicated in item 1 of this section. If this is not a primary industry, continue with item 8.

For two or more substantially identical outfalls, permission may be requested from the appropriate district supervisor to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfall(s) If the request is granted by the district supervisor, attach a narrative describing which outfall was sampled, and describe why the outfalls which were not sampled are substantially similar to the outfall that was sampled

A Indicate if the discharge from this outfall contains any process wastewater If the discharge from this outfall contains process wastewater, check **"YES"** and continue with B below If the discharge from this outfall does not contain any process wastewater, check **"NO"** and continue with item 8 Does this outfall discharge contain any process wastewater?

☐ Yes, Continue with B ☒ No, Continue with Item 8

B Primary Industries must submit test results for organic toxic pollutants Table 2 in the appendix contains a list of GC/MS fractions required by each industrial category Indicate the GC/MS fractions required for the facility industrial category

☐ Volatile ☐ Base/Neutral ☐ Acid ☐ Pesticide

Provide analytical data for each parameter of the GC/MS fraction checked above The required parameters in each fraction are specified in Table 3 in the appendix Provide copies of the analytical results or record the information in Item 9 Additionally, all primary industries which discharge process wastewater shall provide quantitative data for the parameters specified in Table 4 in the appendix Applicants are not required to analyze for 2,3,7,8-TCDD (Dioxin) unless they believe it is present in the discharge

8 ADDITIONAL TOXIC POLLUTANT INFORMATION

A If an applicant, regardless of the type of discharge, knows or has reason to believe that any pollutant listed in Tables 3, 4, 5, 7 and 8 (in the appendix) is discharged from any outfall, then quantitative data shall be provided for those pollutants

☒ Not Applicable/Believed Absent ☐ Present, Data is attached or recorded in Item 9

B If an applicant (primary or secondary industry), regardless of the type of discharge, knows or has reason to believe any pollutants listed in Table 6 (in the appendix) are discharged from any outfall, the applicant shall describe reasons for the pollutant being present and provide any available quantitative data

☒ Not Applicable/Believed Absent ☐ Present, Data is attached or recorded in Item 9

C All applicants (primary and secondary industries) who use or manufacture 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T), 2-(2,4,5-Trichlorophenoxy) propanoic acid (Silvex), 2-(2,4,5-Trichlorophenoxy) ethyl 2,2-Dichloropropionate (Erbon), 0,0-Dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel), 2,4,5-Trichlorophenol (TCP), or Hexachlorophene (HCP) must report data using standard analytical calibration procedures All surface water discharge applicants (primary and secondary industries) who know or have reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is or may be present in their discharge must report qualitative data generated using a screening procedure not calibrated with analytical standards for TCDD

☒ Not Applicable/Believed Absent ☐ Present, Data is attached or recorded in Item 9

D If the applicant knows or has reason to believe that biological tests (including WET tests) were made in the last three (3) years on any of the applicant's discharges or on a receiving water in relation to the discharge(s), provide this information as an attachment to this application

☒ Not Applicable ☐ Applicable, Data is attached

E If a contract laboratory or consulting firm performed any of the analyses required by this application, provide the name and address of each laboratory or firm as an attachment to this application

☐ Not Applicable ☒ Applicable, Information is provided

F Does the facility discharge any other toxic or injurious chemical substances not listed in Tables 3 through 9 in the appendix ?

☒ No, Continue with Section III C ☐ Yes, Data is attached or recorded in Item 9

Section III - Industrial and Commercial Wastewater
B. Outfall Information
Item 8E. Contract Laboratory

KAR Laboratories, Inc.
4425 Manchester Road
Kalamazoo, MI 49001
Phone: 616/381-9666
FAX: 616/381-9698

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

Complete a separate Section III B - Outfall Information (pages 24-30) for each outfall at the facility Make copies of this blank section of the application if necessary

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER	OUTFALL NUMBER
MICHIGAN PAPERBOARD CO.	M1000134 1	001

9 EFFLUENT CHARACTERISTICS - TOXIC POLLUTANTS

This worksheet is to be used by applicants to record information on any Michigan Critical Material, EPA Priority Pollutant, or hazardous substance for which this application requires that data be provided This includes any substance from Table 3 which lists Organic Toxic Pollutants, Table 4, Other Toxic Pollutants, Table 5, Conventional and Nonconventional Pollutants, Table 6, Toxic Pollutants and Hazardous Substances, Table 7 the Michigan Critical Materials Register, or Table 8 the EPA Priority Pollutant Listing (in the appendix) If the applicant believes a pollutant may be present in the effluent that is not included in these lists, data shall be provided for that pollutant with this application This information may also be included as an attachment to this application on 8 1/2" x 11" paper Page 12 of the appendix is a list of minimum testing requirements for various dischargers As a minimum, applicants for those types of discharge must provide analytical data based on that list

Applicants shall use EPA approved analytical methods when conducting sampling (40 CFR 136) For each parameter provide the name of the parameter as listed in the Tables, the maximum daily and monthly discharge concentrations, units, the number of analyses performed, and the sample type If analytical results for a composite sample are being provided and the sample is not a 24-hour composite, include a description of the sample collection technique used as an attachment to this application on 8 1/2" x 11" paper When calculating an average where some values are detectable and others are nondetectable, either provide the actual data, or regard each nondetectable value as the detection level when calculating concentrations and indicate that the result is "less than" the value reported (See definitions of "daily concentration" and "monthly concentration" in the general provisions at the front of this form) Please include an explanation if "Pollution Prevention" is expected to provide reductions of pollutants (See page ii and iii for sampling definitions, including, "daily concentration", and "monthly concentration") See Table 12 in the appendix for acceptable "Levels of Quantification"

In addition to the maximum daily and maximum monthly concentrations required above the applicant must provide individual sample data to determine if Water Quality Based Effluent Limits (WQBELs) are necessary If more than 10 individual samples results are available please provide this data in an attachment to the application WQBELs for toxic pollutants are incorporated into an NPDES permit when the DEQ has determined that a substance is or may be discharged into the receiving waters at a level that has a reasonable potential to exceed the substance's water quality value The determination is made using the procedure described in the Part 8 Rules of Act 451, Public Acts of 1994 as amended (See page 7 in the appendix)

Check this box if additional information is included as an attachment

Toxic Pollutant	Maximum Daily Concentration (µg/l)	Maximum Monthly Concentration (µg/l)	Quantification Level Used (µg/l)	Number of Analyses	Sample Type
Individual Samples (ug/l)					
					Grab 24 Hr Comp
N/A 1 2 3 4 5 6 7 8 9 10					
					Grab 24 Hr Comp
1 2 3 4 5 6 7 8 9 10					
					Grab 24 Hr Comp
1 2 3 4 5 6 7 8 9 10					

Are any of the above listed toxic pollutants present in the facility's supply water?

☐ No, Continue to question 7 ☐ Yes, Please read below

In accordance with Rule 1211(7), facilities whose supply water contains toxic pollutants that are withdrawn from and discharged to the same body of water may qualify for intake credits for those toxic pollutants See Rule 1211(7) for qualification and demonstration requirements

Michigan Department of Environmental Quality- Surface Water Quality Division

WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

C Signature Page

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES PERMIT or COC NUMBER
MICHIGAN PAPERBOARD CO.	M10001341

10 CERTIFICATION

Rule 323 2114(1-4) of the Part 21 Rules of Michigan Act 451, Public Act of 1994, Part 31, as amended, requires that this application be signed as follows

A For a corporation, by a principal executive officer of at least the level of vice president, or their designated representative if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application or other NPDES form originates

B For a partnership, by a general partner

C For a sole proprietorship, by the proprietor

D For a municipal, state, or other public facility by either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for having knowledge of violations "

Print Name Mark Reed Title General Manager

Representing Michigan Paperboard Company

Signature Mark T. Reed Date 3/29/00

This completes Section III. Section III must be completed for all applicants requesting authorization to discharge wastewater(s) from an industrial or commercial facility to a surface water of the state. When Section I and III are complete please the return application to the appropriate district office (see pages 2 and 3 of the appendix for district office addresses and a map of district boundaries).

If assistance is needed in determining the appropriate sections to complete or if assistance is needed completing this application contact the appropriate district office.

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET www deq state mi us

RUSSELL J. HARDING, Director

REPLY TO

SURFACE WATER QUALITY DIVISION
KNAPPS CENTRE
PO BOX 30273
LANSING MI 48909-7773

May 18, 2001

Ms. Barbara Russell
Technical Superintendent
Michigan Carton and Paperboard Company
79 East Fountain Street
Battle Creek, Michigan 49017

Dear Ms. Russell:

SUBJECT: Water Treatment Additive Request – NPDES Permit #MI0001341

We have examined the request dated April 12, 2001, to use the water treatment additives, ASC Product 8119 and ASC Product 8134, manufactured by Aurora Specialty Chemistries. The ASC Products 8119 and 8134 are intended to be used as a polymer for boiler blowdown treatment and a neutralizing amine for the boiler blowdown treatment, respectively, at the Michigan Carton and Paperboard Company located at the address listed above. Residual products would be discharged at a concentration of 0.004 parts per million each via outfall 001 to the Kalamazoo River. The total volume of blowdown water discharged during this sequence is approximately 1,000 gallons (0.0015 cubic feet per second (cfs)), and the Kalamazoo River has a 95 percent exceedance flow of 170 cfs at a point near the outfall.

Approval for the use of the additives, ASC Product 8119 and ASC Product 8134, at the facility and under the conditions listed above is hereby granted with the understanding that the pH of the effluent will remain within your National Pollutant Discharge Elimination System permit limits of 6.5 as a daily minimum and 9.0 as a daily maximum.

If you have any questions regarding this matter, please contact Ms. Sarah Wolf of our staff at 517-241-7931.

Sincerely,

William Creal

William Creal, Chief
Water Quality Appraisal Unit South
Great Lakes and Environmental Assessment Section
Surface Water Quality Division
517-335-4181

wc:sw:ls

cc: Mr. Fred Morley, Kalamazoo District Supervisor, SWQD, DEQ
Ms. Sarah Wolf/Facility File, SWQD, DEQ

mpc

MICHIGAN PAPERBOARD COMPANY
79 East Fountain Street
Battle Creek Michigan 49017
616-963-4004
616-963-4425 FAX

Mr William Creal
Surface Water Quality Division
Michigan Department of Environmental Quality
Box 30273
Lansing Michigan 48909

April 12 2001

Dear Mr Creal

RE NPDES MI0001341

This is a request for approval to discharge water treatment additives that we would like to utilize in our powerhouse water treatment system The additives would be part of our manual blowdown and the following or attached information is being submitted per your Water Treatment Additives Discharge Approval Process

1 The additives are ASC Product 8119 and 8134 (the company name changed from EMS to Aurora) The MSDSs are attached as Attachment 1 and 2

2 The concentration for each product, ASC Product 8119 and 8134, would be below 10 PPM or 0 001% in the blow-down water The total volume of water discharged during this sequence would be approximately 1000 gallons Based on our average discharge volume, this would amount to a discharge level below 0 004 PPM for each product during the blowdown period

3 The discharge frequency would occur during our manual blowdowns, one to three times per day for a duration of 15 seconds each

4 The discharge would be made through our Outfall 001, which flows to the Kalamazoo River

5 There would be no treatment of the blow-down prior to discharge

6 The ASC Product 8119 is a polymer for boiler water treatment and the 8134 is a neutralizing amine for the boiler water treatment

7 The 48-hour LC50 data for the products can be found in Attachments 3 and 4

8 The 96-hour LC50 data for the products can be found in Attachments 5 and 6

If you have any other questions regarding the above or attached information, please feel free to contact me at the numbers listed above Our NPDES is currently in the renewal process

Sincerely,

Barbara Russell

Barbara Russell
Technical Superintendent

cc Andrew VanTil – MDEQ Kalamazoo Field Office
Tim Pinter – Aurora Specialty Chemistries (formerly Environment Marketing Services)
Chirs Blume – Field Container, Elk Grove
Mark Reed
Jim Hosking

ISO 9002

MATERIAL SAFETY DATA SHEET

AURORA SPECIALTY CHEMISTRIES
1520 LAKE LANSING ROAD
LANSING MI 48912
EMERGENCY PHONE: (517) 372-9121

SECTION 1 -- PRODUCT INFORMATION

REVISED DATE 9/98 TRADE SECRET

PRODUCT NAME: 8119

CHEMICAL FAMILY: Water treatment Compound

DOT CLASSIFICATION: Corrosive Liquids, N.O.S., (Sodium Hydroxide), Corrosive Material, 8, UN1760, II

SECTION 2 -- HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	%	PEL/TWA
Sodium Hydroxide	1310-73-2	<5%	2 mg/m^3

SECTION 3 -- PHYSICAL CHARACTERISTICS

BOILING POINT (°F): 212
VAPOR PRESSURE (mmHg @ 25 °C): N/A
VAPOR DENSITY (AIR=1): N/A

SOLUBILITY IN WATER: N/A
SPECIFIC GRAVITY (WATER=1): 1.21 ± 0.02
PERCENT VOLATILE BY VOLUME: N/A
pH: 4.55 ± 1.0

APPEARANCE AND ODOR: Colorless to Amber clear liquid, Non-specific odor.

SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A
METHOD USED:

FLAMMABLE LIMIT
LFL: N/A
UFL: N/A

EXTINGUISHING MEDIA: As for surroundings

SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: Always wear self-contained breathing apparatus when fighting fires involving chemicals.

STABILITY : STABLE: XX
UNSTABLE:

INCOMPATIBILITY: N/A

HAZARDOUS DECOMPOSITION: N/A

HAZARDOUS POLYMERIZATION: Will not occur.

CONTINUED ON PAGE 2

M A T E R I A L S A F E T Y D A T A S H E E T

PRODUCT NAME: 8119

SECTION 5 -- SPILL, LEAK AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS: **Small-** Flush to drain with plenty of water. **Large-** Absorb with sawdust or commercial absorbent material and contain.

DISPOSAL METHOD: In accordance with all local, state and federal regulatory agencies

SECTION 6 -- HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Not determined for mixture.

EYE: Slight irritation

SKIN CONTACT: May cause irritation.

SKIN ABSORPTION. N/A.

INGESTION: Toxic

INHALATION. May cause irritation to respiratory system.

CARCINOGENIC - NTP PROGRAM: None

SYSTEMIC AND OTHER EFFECTS: No target organ effects known or anticipated.

Hazard Ratings (NFPA): Health: , Fire. , Reactivity: , Special:

SECTION 7 -- FIRST AID

EYES: Flush with water for 15 minutes, holding lids open. Call a physician if irritation persists

SKIN. Wash thoroughly with water. Remove contaminated clothing and wash before re-use Call a physician if irritation persists.

INGESTION: Drink plenty of water and contact a physician. Never give anything by mouth to an unconscious person.

INHALATION Remove to fresh air. If breathing has stopped, give mouth to mouth respiration and call a physician.

SECTION 8 -- SPECIAL HANDLING INFORMATION

RESPIRATORY PROTECTION: Not needed under normal use conditions.

VENTILATION. General ventilation satisfactory under normal use conditions

CONTINUED ON PAGE 3

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: 8119

SECTION 8 -- SPECIAL HANDLING INFORMATION (continued)

EYE PROTECTION: Safety glasses with side-shields or chemical splash goggles.

PROTECTIVE GLOVES: Rubber or other impervious material.

PROTECTIVE CLOTHING: Impervious clothing and footwear recommended.

SECTION 9 -- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in cool, dry area. Keep container closed when not in use. Keep away from children and other unauthorized personnel.

OTHER PRECAUTIONS: Eyewash station and shower in work area recommended when handling chemicals of any kind. Wash thoroughly after handling.

IN CASE OF EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS, CONTACT CHEMTREC AT 1-800-424-9300

(saved as shared/office/msds/boiler/8119) REVISED KI
9/29/98

ATTACHMENT 2

MATERIAL SAFETY DATA SHEET

AURORA SPECIALTY CHEMISTRIES
1520 LAKE LANSING ROAD
LANSING MI 48912
EMERGENCY PHONE. (517) 372-9121

SECTION 1 -- PRODUCT INFORMATION

REVISED DATE: 9/98 TRADE SECRET

PRODUCT NAME: 8134

CHEMICAL FAMILY: Amine Mixture

DOT CLASSIFICATION: Corrosive Liquids, N.O.S , (Morpholine & Cyclohexylamine), Corrosive Material, 8, UN1760, II

SECTION 2 -- HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	%	PEL/TWA
Cyclohexylamine	108-91-8	<40	10 ppm
Morpholine	110-91-8	<20	20 ppm

SECTION 3 -- PHYSICAL CHARACTERISTICS

BOILING POINT (°F): 212
VAPOR PRESSURE (mmHg @ 25 °C): N/D
VAPOR DENSITY (AIR=1): N/D

SOLUBILITY IN WATER: Complete
SPECIFIC GRAVITY (WATER=1): 0.96 ± 0.02
PERCENT VOLATILE BY VOLUME: N/A
pH: 11-13

APPEARANCE AND ODOR: Colorless Liquid, ammonia like odor.

SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 125 F
METHOD USED: PMCC

FLAMMABLE LIMIT
LFL: Not determined.
UFL: Not determined.

EXTINGUISHING MEDIA: Water

SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: May react with oxidizing materials. High heat and flames may cause fire or explosion. Always wear self-contained breathing apparatus when fighting fires involving chemicals.

STABILITY : STABLE: XX
UNSTABLE:

INCOMPATIBILITY: Oxidizers and acids.

HAZARDOUS DECOMPOSITION: None Known

HAZARDOUS POLYMERIZATION: Will not occur

CONTINUED ON PAGE 2

M A T E R I A L S A F E T Y D A T A S H E E T

PRODUCT NAME: 8134

SECTION 5 -- SPILL, LEAK AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS: Dike spill. Save salvageable material. Soak up remainder with absorbent material and remove Flush spill area with water.

DISPOSAL METHOD: In accordance with all local, state and federal regulatory agencies.

SECTION 6 -- HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE. Not determined for mixture.

EYE: May cause irritation, discomfort or injury.

SKIN CONTACT: May cause irritation or burns.

SKIN ABSORPTION: Not expected to be a hazard.

INGESTION: May be harmful or fatal if swallowed.

INHALATION: May cause irritation to respiratory tract.

CARCINOGENIC - NTP PROGRAM: None

SYSTEMIC AND OTHER EFFECTS: No target organ effects known or anticipated.

Hazard Ratings (NFPA): Health: 2 , Fire: 2, Reactivity: 1 , Special: Alkalai/Corrosive

SECTION 7 -- FIRST AID

EYES: Flush with water for 15 minutes, holding lids open. Call a physician if irritation persists.

SKIN: Wash thoroughly with soap and water. Call a physician if irritation persists.

INGESTION: Drink plenty of water. Induce vomiting. Call a physician. Never give anything by mouth to an unconscious person..

INHALATION: Remove to fresh air. If breathing has stopped, give mouth to mouth respiration and call a physician.

SECTION 8 -- SPECIAL HANDLING INFORMATION

RESPIRATORY PROTECTION. Not needed under normal use conditions.

VENTILATION. General ventilation satisfactory under normal use conditions.

CONTINUED ON PAGE 3

M A T E R I A L S A F E T Y D A T A S H E E T

PRODUCT NAME: 8134

SECTION 8 -- SPECIAL HANDLING INFORMATION (continued)

EYE PROTECTION: Safety glasses with side-shields or chemical splash goggles.

PROTECTIVE GLOVES: Rubber or other impervious material.

PROTECTIVE CLOTHING: Impervious clothing and footwear recommended.

SECTION 9 -- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not freeze. Keep container closed when not in use. Keep away from children and other unauthorized personnel.

OTHER PRECAUTIONS: Eyewash station and shower in work area recommended when handling chemicals of any kind. Wash thoroughly after handling.

IN CASE OF EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS, CONTACT CHEMTREC AT 1-800-424-9300

(saved as shared/office/msds/boiler/8134) REVISED KI
9/30/98

ATTACHMENT 3

Environmental
Resources
Management

TEST OVERVIEW

Client	Aurora Specialty Chemistries	Laboratory	Dell Engineering Inc
Location	1520 Lake Lansing Road Lansing, Michigan 48912	Location	3352 128th Avenue Holland, Michigan 49424-9263
Contact	Mr Tim Pinter	Lab Contact	Mr Bruce Rabe
Telephone #	(517) 372-9121	Telephone #	616-399-3500

Test/Method	*Daphnia magna* 48-Hour Definitive Toxicity Test, EPA/600/4-90/027F
Test Material	ASC Product 8119 (10 ppm)
Date Received	03/02/01
Lab Sample I D s	030201-7
Test Initiation Date	03/12/01
Report Date	03/23/01
Result Summary	See Table Below

TEST ENDPOINT	CONCENTRATIONS (mg/L as nominal)			
	Control	100	1,000	10,000
% Survival	95	85	100	90
48-Hr LC_{50} = >10,000 mg/L				

Bruce A Rabe
Manager, Aquatic
Toxicology Laboratory
Dell Engineering Project No FG201 00 01

Dell Engineering, Inc
3352 128th Avenue
Holland, Michigan 49424-9263
Phone (616) 399-3500
FAX (616) 399-3777

ATTACHMENT 4

Environmental
Resources
Management

TEST OVERVIEW

Client Location	Aurora Specialty Chemistries 1520 Lake Lansing Road Lansing, Michigan 48912	Laboratory Location	Dell Engineering, Inc 3352 128th Avenue Holland, Michigan 49424-9263
Contact	Mr Tim Pinter	Lab Contact	Mr Bruce Rabe
Telephone #	(517) 372-9121	Telephone #	616-399-3500

Test/Method	*Daphnia magna* 48-Hour Definitive Toxicity Test, EPA/600/4-90/027F
Test Material	ASC Product 8134 (10 ppm)
Date Received	03/02/01
Lab Sample I D s	030201-8
Test Initiation Date	03/12/01
Report Date	03/23/01
Result Summary	See Table Below

TEST ENDPOINT	CONCENTRATIONS (mg/L as nominal)			
	Control	100	1,000	10,000
% Survival	100	100	100	100
48-Hr LC_{50} = >10,000 mg/L				

Bruce A Rabe
Manager, Aquatic
Toxicology Laboratory
Dell Engineering Project No FG201 00 01

Dell Engineering, Inc
3352 128th Avenue
Holland, Michigan 49424-9263
Phone (616) 399-3500
FAX (616) 399-3777

ATTACHMENT 5

Environmental
Resources
Management

TEST OVERVIEW

Client Location	Aurora Specialty Chemistries 1520 Lake Lansing Road Lansing, Michigan 48912	Laboratory Location	Dell Engineering, Inc 3352 128th Avenue Holland, Michigan 49424-9263
Contact	Mr Tim Pinter	Lab Contact	Mr Bruce Rabe
Telephone #	(517) 372-9121	Telephone #	616-399-3500

Test/Method *Pimephales promelas* 96-Hour Definitive Toxicity Test, EPA/600/4-90/027F

Test Material ASC Product 8119 (10 ppm)

Date Received 03/02/01

Lab Sample I D s 030201-7

Test Initiation Date 03/12/01 Report Date 03/23/01

Result Summary See Table Below

TEST ENDPOINT	CONCENTRATIONS (mg/L as nominal)			
	Control	100	1,00	10,000
% Survival	100	100	100	100
96-Hr LC_{50} = >10,000 mg/L				

Bruce A Rabe
Manager, Aquatic
Toxicology Laboratory
Dell Engineering Project No FG201 00 01

Dell Engineering, Inc
3352 128th Avenue
Holland, Michigan 49424-9263
Phone (616) 399-3500
FAX (616) 399-3777

ATTACHMENT 6

Environmental
Resources
Management

TEST OVERVIEW

Client	Aurora Specialty Chemistries	Laboratory	Dell Engineering, Inc
Location	1520 Lake Lansing Road Lansing, Michigan 48912	Location	3352 128th Avenue Holland, Michigan 49424-9263
Contact	Mr Tim Pinter	Lab Contact	Mr Bruce Rabe
Telephone #	(517) 372-9121	Telephone #	616-399 3500

Test/Method	*Pimephales promelas* 96-Hour Definitive Toxicity Test, EPA/600/4-90/027F
Test Material	ASC Product 8134 (10 ppm)
Date Received	03/02/01
Lab Sample I D s	030201-8
Test Initiation Date	03/12/01
Report Date	03/23/01
Result Summary	See Table Below

TEST ENDPOINT	CONCENTRATIONS (mg/L as nominal)			
	Control	100	1,00	10,000
% Survival	100	85	100	100
96-Hr LC_{50} = >10,000 mg/L				

Bruce A Rabe
Manager, Aquatic
Toxicology Laboratory
Dell Engineering Project No FG201 00 01

Dell Engineering, Inc
3352 128th Avenue
Holland, Michigan 49424-9263
Phone (616) 399-3500
FAX (616) 399-3777

STATE OF MICHIGAN

JOHN ENGLER Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING PO BOX 30473 LANSING MI 48909 7973
RUSSELL J HARDING Director

REPLY TO
SURFACE WATER QUALITY DIVISION
KNAPPS CENTRE
PO BOX 30273
LANSING MI 48909 7773

October 2, 1996

CERTIFIED MAIL -- P 419 692 676

Field Container Corporation
Michigan Carton and Paperboard Company
79 East Fountain Street
Battle Creek, Michigan 49017

Gentlemen

SUBJECT NPDES Permit No MI0001341 - Mich Carton & Paperboard Co, 79 East Fountain Street, Battle Creek

Your National Pollutant Discharge Elimination System (NPDES) Permit has been processed in accordance with appropriate state and federal regulations It contains the requirements necessary for you to comply with state and federal water pollution control laws

REVIEW THE PERMIT EFFLUENT LIMITS AND COMPLIANCE SCHEDULES CAREFULLY These are subject to the criminal and civil enforcement provisions of both state and federal law Permit violations are audited by the Michigan Department of Environmental Quality and the United States Environmental Protection Agency and may appear in a published quarterly noncompliance report made available to agencies and the public

Your monitoring and reporting responsibilities must be complied with in accordance with this permit If applicable, Discharge Monitoring Report forms will be transmitted to you in the near future These reports are to be submitted monthly or otherwise as required by your NPDES permit

Any reports, notifications, or questions regarding the attached permit or NPDES program should be directed to the following address

Ms Mary Ellen Cromwell, District Supervisor
Jackson District Office, SWQD, DEQ
301 East Louis Glick Highway
Jackson, Michigan 49201
Telephone 517-780-7900

Sincerely,

William E. McCracken

William E McCracken, P E
Chief, Permits Section
Surface Water Quality Division
517-373-8088

Attachment Permit
cc EPA-Region 5
208 Agency - South Central Michigan Planning Council
Ms Mary Ellen Cromwell, Jackson District Supervisor, SWQD (2) (Supersedes Storm Water COC MIR14J006)
Data Entry, SWQD (Supersedes Storm Water COC MIR14J006)
Files

PERMIT NO. MI0001341

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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 "Federal Act"), Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Parts 31 and 41, and Michigan Executive Orders 1991-31, 1995-4 and 1995-18,

Field Container Corporation
Michigan Carton and Paperboard Company
(formerly Michigan Paperboard Corporation)
79 East Fountain Street
Battle Creek, Michigan 49017

is authorized to discharge from a facility located at

79 East Fountain Street
Battle Creek, Michigan 49017

designated as Mich Carton & Paperboard Co

to the receiving water named the Kalamazoo River in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit takes effect on January 1, 1997. Any person who is aggrieved by this permit may file a sworn petition with the Office of Administrative Hearings of the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department may reject any petition filed more than 60 days after issuance as being untimely. Upon granting of a contested case, the Department shall review the permit to determine which contested conditions shall be stayed until the Department takes its final action. If a condition contested by the applicant is a requirement placed on wastewater covered by a new or increased discharge authorization, such increased discharge authorization shall be stayed until the Department takes 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 Department determines the contested condition shall be stayed, then such previous condition remains in effect until the Department takes final action.

This permit and the authorization to discharge shall expire at midnight, October 1, 2000. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information and forms as are required by the Michigan Department of Environmental Quality to the Jackson District Supervisor of the Surface Water Quality Division by April 1, 2000.

This permit is based on a complete application submitted on February 14, 1996, as amended through August 5, 1996. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date this permit shall supersede NPDES Permit No. MI0001341, expired January 31, 1987, and Certificate of Coverage No. MIR14J006, issued December 5, 1994, which is revoked when superseded by this permit.

Issued September 27, 1996.

William E. McCracken
Chief, Permits Section
Surface Water Quality Division

PART I

Section A. Limitations and Monitoring Requirements

1. Final Effluent Limitations, Outfall 001

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of three million two hundred thousand (3,200,000) gallons per day of noncontact cooling water, sand filter backwash water, boiler blowdown, and storm water runoff from outfall 001 to the Kalamazoo River. Such discharge shall be limited and monitored by the permittee as specified below.

	Quantity or Loading			Quality or Concentration					
Parameter	Monthly Average	Daily Maximum	Units	Daily Minimum	Monthly Average	Daily Maximum	Units	Frequency of Analysis	Sample Type
Flow	(report)	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Total Suspended Solids	534	800	lbs/day	---	20	30	mg/l	Weekly	Grab
Total Residual Chlorine (TRC)		---	---	---	---	200	µg/l	Daily	Grab
Beginning March 1, 1997:									
Discharge Mode									
Continuous (greater than 160 min/day)			---	---	---	36	µg/l	Daily	Grab
Intermittent (less than/equal to 160 min/day)				---	---	200	µg/l	Daily	Grab
TRC Discharge Time	---	---	---	---	---	(report)	min/day	Daily	Report Total Discharge Time
Temperature	---	---	---	---	(report)	(report)	°F	Weekly	Reading
pH	---	---	---	6.5	---	9.0	Standard Units	Weekly	Grab
Outfall Observation	---	---	---	(report)	---	---	---	Daily	Visual

a. Narrative Standard
The receiving water shall contain no unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits as a result of this discharge.

b. Monitoring Location
Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken at outfall 001 prior to discharge to the Kalamazoo River.

PART I

Section A. Limitations and Monitoring Requirements

c Monitoring Requirements

The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for all parameters shall be in accordance with approved EPA methods The analysis for total residual chlorine shall be performed using U S EPA Method 330 1 or by electrode (Orion 97-70) Detection levels shall not exceed 20 µg/l unless higher levels are appropriate due to sample matrix interference

During the intermittent discharge of chlorine, the daily maximum value reported for TRC shall be the average of a minimum of three (3) equally spaced grab samples taken during a chlorine discharge event, with the additional limitation that no single sample may exceed 300 µg/l Limitations for the intermittent discharge of chlorine apply only when the discharge is less than or equal to 160 minutes per day, otherwise the limitations for continuous discharge of chlorine apply

The permittee shall enter a zero ("0") on the Discharge Monitoring Report for the TRC discharge mode not being used

The permittee may use dechlorination techniques to achieve the applicable TRC limitations, using sodium thiosulfate, sodium sulfite, sodium bisulfite, or other dechlorinating reagents approved by the Jackson District Supervisor The quantity of reagent(s) used shall be limited to 1 5 times the stoichiometric amount of applied chlorine oxidant Each month the permittee shall report the quantity of each dechlorination reagent used per day

d Monitoring Frequency Reduction for TRC

After the submittal of twelve (12) months of data, the permittee may request a reduction in monitoring frequency for TRC This request shall contain an explanation as to why the reduced monitoring is appropriate and shall be submitted to the Jackson District Supervisor of the Surface Water Quality Division Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I A 1 of this permit The monitoring frequency for TRC shall not be reduced to less than weekly The Jackson District Supervisor may revoke the approval for reduced monitoring at any time upon notification to the permittee

e Outfall Observation

Any unusual characteristics of the discharge (i e , unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits) shall be reported within 24 hours to the Jackson District Supervisor of the Surface Water Quality Division followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition

f Water Treatment Additives

In the event the permittee proposes the use or discharge of a water treatment additive that has not previously been approved by the Jackson District Supervisor of the Surface Water Quality Division, the permittee shall notify the Jackson District Supervisor Written approval from the Jackson District Supervisor to discharge the additive at a specified level shall be obtained prior to discharge by the permittee

PART I

Section A. Limitations and Monitoring Requirements

2. Storm Water Pollution Prevention Plan

The permittee is authorized to discharge storm water associated with industrial activities as defined in 40 CFR 122 26(b)(14) These storm water discharges shall be controlled in accordance with the requirements of this special condition The permittee shall develop a Storm Water Pollution Prevention Plan (plan) in accordance with good engineering practices The goal of the plan is to maximize control of significant materials (as defined in Part I A 2 k) and reduce the level of such materials in storm water so that storm water discharges will not cause a violation of Michigan's Water Quality Standards A schedule for achieving this goal is established in Part I A 2 a To meet this goal, the permittee shall develop a plan to achieve the following objectives

- identify a person or persons at the facility who shall have supervision over the inspection and management of storm water controls and who is or will be certified under Part I A 2 a 1),

- identify sources of significant materials (as defined in Part I A 2 k) that could mix with storm water and be discharged from the facility (Part I A 2 c),

- identify non-structural controls to be used at the source to prevent significant materials from entering storm water (Part I A 2 d),

- provide structural controls, if needed, to prevent significant materials from entering storm water, and to give additional control or treatment for storm water that has become contaminated by significant materials (Part I A 2 e),

- ensure that the plan is regularly evaluated and updated (Part I A 2 f),

- ensure that all non-storm water discharges are covered by an NPDES permit (Part I A 2 m)

a Schedule for Plan Preparation and Implementation - Existing Dischargers

1) On or before December 1, 1995, the permittee shall have a storm water operator certified by the Michigan Department of Environmental Quality, as required by Section 3110 of the Michigan Act The storm water certified operator shall have supervision over the facility's storm water treatment and control measures included in the plan

2) On or before June 1, 1996, the permittee shall develop the plan The plan shall be reviewed and signed by the certified storm water operator, and in accordance with Part I A 2 l The permittee shall certify in writing to the Jackson District Supervisor of the Surface Water Quality Division that the plan has been developed in accordance with the requirements of this permit and that all non-storm water discharges are covered by an NPDES permit

3) On or before December 1, 1996, the permittee shall complete implementation of the non-structural requirements of the plan (see Part I A 2 d) and shall certify in writing to the Jackson District Supervisor that the non-structural requirements of the plan have been implemented

4) On or before December 1, 1997, the permittee shall have completed construction of and put into operation all structural storm water pollution control facilities identified in the plan (see Part I A 2 e) The permittee shall certify in writing to the Jackson District Supervisor that all structural controls have been completed

PART I

Section A. Limitations and Monitoring Requirements

b. Failure to Comply with Schedules for Plan Preparation and Implementation
Failure to meet the certification requirements and schedules listed in Part I.A.2.a. constitutes a violation of this permit. If such a violation should occur, the permittee shall provide written notification within 14 calendar days following the missed deadline to the Jackson District Supervisor of the Surface Water Quality Division. The permittee's written notification shall include identification of the requirement not completed, an explanation of the failure to meet the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be met.

c. Source Identification
To identify potential sources of significant materials that can enter storm water and subsequently be discharged from the facility, the plan shall, at a minimum, include the following:

1) A site map identifying the following: buildings and other permanent structures; storage or disposal areas for significant materials; storm water discharge outfalls (numbered for reference); location of storm water inlets contributing to each outfall; location of NPDES permitted discharges other than storm water; outlines of the drainage areas contributing to each outfall; structural runoff controls or storm water treatment facilities; areas of vegetation; areas of exposed and/or erodible soils; impervious surfaces (roofs, asphalt, concrete); name and location of receiving water(s); and areas of known or suspected impacts on surface waters as designated under Part 201 of the Michigan Act.

2) An evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities: loading, unloading, and other material handling operations; outdoor storage; outdoor manufacturing or processing activities; significant dust or particulate generating processes; discharge from rooftop vents, stacks and air emission controls; on-site waste disposal practices; maintenance and cleaning of vehicles, machines and equipment; other appropriate areas; and sites of environmental contamination listed under Part 201 of the Michigan Act.

3) A list of all significant materials that could enter storm water. For each material listed, the plan shall include the following descriptions:

a) ways in which each type of material has been or has reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles; waste handling and disposal; deposits from dust or overspray, etc.);

b) identification of the outfall or outfalls through which the material may be discharged if released;

c) a listing of oil and other polluting materials that have been spilled or leaked over the three (3) years prior to the completion of the plan; the date, volume and exact location of release; and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the plan has been developed shall be controlled in accordance with the plan and is cause for the plan to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.

d) a summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges associated with industrial activity at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

PART I

Section A. Limitations and Monitoring Requirements

d. Preventive Measures and Source Controls, Non-Structural
To prevent significant materials from contacting storm water at the source, the plan shall, at a minimum, include the following non-structural controls:

1) Description of a program for routine preventive maintenance which includes requirements for inspection and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. A log of the inspection and corrective actions shall be maintained on file by the permittee, and shall be retained in accordance with Part I.A.2.h.

2) A schedule for comprehensive inspection of equipment, plant areas, and structural pollution prevention and treatment controls to be performed at least once every six (6) months. A report of the results of the comprehensive inspection shall be prepared and retained in accordance with Part I.A.2.h. The report shall identify any incidents of non-compliance with the plan. When a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this plan.

3) A description of good housekeeping procedures to maintain a clean, orderly facility.

4) The plan shall specify material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The procedures shall identify measures to prevent the spilled materials from being discharged into storm water. The plan may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (Rules 323.1151 through 323.1169 of the Michigan Administrative Code), or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.

5) Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. The plan shall also identify measures used to control soil erosion and sedimentation.

6) A description of employee training programs which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the plan. The plan shall identify periodic dates for such training.

7) Identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls.

e. Structural Controls for Prevention and Treatment
Where implementation of the measures required by Part I.A.2.d. does not control storm water discharges in accordance with Part I.A.2., the plan shall provide a description of the location, function, and design criteria of structural controls for prevention and treatment. Structural controls may be necessary:

1) to prevent uncontaminated storm water from contacting or being contacted by significant materials.

2) if preventive measures are not feasible or are inadequate to keep significant materials out of the storm water. Structural controls shall be used to treat, divert, recycle, reuse or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with Michigan's Water Quality Standards as identified under Part I.A.2.i.

PART I

Section A. Limitations and Monitoring Requirements

f Keeping Plans Current

1) The permittee shall review the plan no later than 30 months after the effective date of the permit and annually thereafter

Based on the review, the permittee shall amend the plan as needed to ensure continued compliance with the terms and conditions of this permit The plan shall also be updated or amended whenever changes at the facility increase or have the potential to increase the exposure of significant materials to storm water, or when the plan is determined by the permittee or the Jackson District Supervisor of the Surface Water Quality Division to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity Updates based on increased activity at the facility shall include a description of how the permittee intends to control any new sources of significant materials in accordance with the requirements of Parts I A 2 c , I A 2 d , and I A 2 e

2) The Jackson District Supervisor or authorized representative may notify the permittee at any time that the plan does not meet minimum requirements Such notification shall identify why the plan does not meet minimum requirements The permittee shall make the required changes to the plan within 30 days after such notification from the Jackson District Supervisor or authorized representative, and shall submit to the Jackson District Supervisor a written certification that the requested changes have been made

g Signature and Plan Review

1) The plan shall be signed by the storm water certified operator and by either the permittee or an authorized representative in accordance with Part I A 2 l The plan shall be retained on site of the facility which generates the storm water discharge

2) The permittee shall make plans, reports, log books, runoff quality data, and supporting documents available upon request to the Jackson District Supervisor of the Surface Water Quality Division or authorized representative

h Record Keeping

The permittee shall maintain records of all inspection and maintenance activities Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff All such records shall be retained for three (3) years

i Water Quality Standards

At the time of discharge, there shall be no violation of the Michigan Water Quality Standards (Rules 323 1041 through 323 1117 of the Michigan Administrative Code) in the receiving waters as a result of the storm water discharge This requirement includes, but is not limited to, the following conditions·

1) In accordance with Rule 50 (Rule 323 1050 of the Michigan Administrative Code), the receiving waters shall not have any of the following unnatural physical properties in quantities which are or may become injurious to any designated use unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge

2) Any unusual characteristics of the discharge (i e , unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits) shall be reported immediately to the Jackson District Supervisor of the Surface Water Quality Division followed with a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition

j Requirements for Storm Water Discharges through Municipal Separate Storm Sewer Systems Serving a Population of 100,000 or More

On the effective date of this permit, the cities of Ann Arbor, Flint, Grand Rapids, Warren and Sterling Heights have been identified as having separate storm sewer systems serving a population of 100,000 or more

PART I

Section A. Limitations and Monitoring Requirements

A storm water permit applicant or permittee who discharges storm water associated with industrial activity through a municipal separate storm sewer system serving a population of 100,000 or more shall do the following:

1) Submit a copy of the application to the operator of the municipal system.

2) Comply with applicable requirements in municipal storm water management programs developed under NPDES permits issued for the discharge of the municipal separate storm sewer system that receives the facility's discharge, provided the discharger has been notified of such conditions.

3) Make the plan available to the operator of the municipal system upon request.

k. Significant Materials includes but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); salt and any material on the Critical Materials Register pursuant to Section 3111 of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

l. Signatory Requirements
All applications, reports or information submitted to the Department shall be signed and certified in accordance with 40 CFR 122.22.

m. Prohibition of Non-storm Water Discharges
Discharges of material other than storm water shall be in compliance with an NPDES permit issued for the discharge. Storm water shall be defined to include the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the plan: discharges from fire hydrant flushing, potable water sources including water line flushing, irrigation drainage, lawn watering, routine building wash down which does not use detergents or other compounds, pavement wash water where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material have been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated groundwater, and foundation or footing drains where flows are not contaminated with process materials such as solvents. Discharges from fire fighting activities are authorized by this permit, but do not have to be identified in the plan.

PART II

Section A. Definitions

This list of definitions may include terms not applicable to this permit.

Acute toxic unit is 100 divided by the LC50 or 100 divided by the EC50 (with the LC50 or EC50 expressed as a percentage).

Chronic toxic unit is 100 divided by the MATC (with the MATC expressed as a percentage).

Daily maximum concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the detection limit, regard that value as zero when calculating the daily maximum concentration.

Daily maximum load is the total discharge by weight of a parameter discharged during any calendar day.

Daily minimum concentration is the minimum concentration of a parameter in any individual sample taken during any calendar day.

District Supervisor of the Surface Water Quality Division is located at the Jackson District Office, 301 East Louis Glick Highway, Jackson, Michigan 49201, telephone: 517-780-7900 (fax: 517-780-7855).

Division of Health Facility Services -- Health Facility Evaluation Section, Michigan Department of Consumer and Industry Services mailing address is P.O. Box 30195, Lansing, Michigan 48909.

Drinking Water and Radiological Protection Division -- Environmental Health, Michigan Department of Environmental Quality mailing address is P.O. Box 30630, Lansing, Michigan 48909-8130.

EC50 (median effect concentration) is the concentration of the effluent predicted by the acute toxicity test results to produce an adverse effect in 50% of the test organism population in a given time interval.

Fecal coliform bacteria monthly (30-day) average is the geometric mean of the samples collected in a calendar month.

Fecal coliform bacteria 7-day average is the geometric mean of the samples collected in any 7-day period.

Flow Proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

Grab sample is a single sample taken at neither a set time nor flow.

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference.]

LC50 (median lethal concentration) is the concentration of the effluent predicted by the acute toxicity test results to kill 50% of the test organism population in a given time interval.

MATC is the maximum acceptable toxicant concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic toxicity test.

PART II

Section A. Definitions

Monthly (30-day) average concentration is the sum of the concentrations of the individual samples divided by the number of samples taken during a reporting month. If the parameter concentration in any sample is less than the detection limit, regard that value as zero when calculating monthly average concentration.

Monthly (30-day) average load is the sum of the daily maximum loads of a parameter divided by the number of daily maximum loads in the reporting month. If the parameter concentration in any sample is less than the detection limit, regard that value as zero when calculating monthly average concentration.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

Noncontact Cooling Water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

POTW is a publicly owned treatment works.

Regional Administrator is the Region V Administrator, U.S. EPA, located at R-16J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

7-day average concentration is the sum of the concentrations of the individual samples divided by the number of samples taken during any 7 consecutive days in a calendar month. If the parameter concentration in any sample is less than the detection limit, regard that value as zero when calculating the 7-day average concentration.

7-day average load is the sum of the weights of parameters discharged divided by the number of samples taken during any 7 consecutive days in a calendar month. If the parameter concentration in any sample is less than the detection limit, regard that value as zero when calculating the 7-day average load.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

3-Portion Composite sample is a sample consisting of three equal volume grab samples collected at equal intervals over an 8-hour period.

24-Hour Composite sample is a flow proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants). For parameters not specified in the permit or covered by the regulations, test procedures shall be submitted for approval to the Jackson District Supervisor of the Surface Water Quality Division.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

5. 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 Department of Environmental Quality.

PART II

Section C. Reporting Requirements

1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Jackson District Supervisor of the Surface Water Quality Division within 14 days, and then 60 days prior to the commencement of the discharge

2. DMR Submittal Requirements

Unless instructed on the effluent limits page to conduct retained self-monitoring, the permittee shall submit Discharge Monitoring Report (DMR) forms to the PCS Unit, Surface Water Quality Division, Michigan Department of Environmental Quality, P O Box 30273, Lansing, Michigan, 48909-7773, for each calendar month of the authorized discharge period(s) The DMRs shall be postmarked no later than the 10th day of the month following each month of the authorized discharge period(s)

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Surface Water Quality Division, Michigan Department of Environmental Quality (in the case of mobile home parks, campgrounds, marinas and schools, to the staff of the Drinking Water and Radiological Protection Division, Michigan Department of Environmental Quality, or, in the case of hospitals, nursing homes and extended care facilities, to the staff of the Division of Health Facility Services -- Health Facility Evaluation Section, Michigan Department of Consumer and Industry Services) Retained self-monitoring results are public information and shall be promptly provided to the public upon request

The permittee shall certify, in writing, to the Jackson District Supervisor of the Surface Water Quality Division, on or before January 10th of each year, that 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained, and 2) the application on which this permit is based still accurately describes the discharge

4. 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 Discharge Monitoring Report Such increased frequency shall also be indicated

Monitoring required pursuant to Part 41 of the Michigan Act or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Jackson District Supervisor of the Surface Water Quality Division indicating whether or not the particular requirement was accomplished If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required

PART II

Section C. Reporting Requirements

6. Noncompliance Notification

Compliance with all requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

a. 24-hour reporting - Any noncompliance which may endanger health or the environment (including daily maximum discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days.

b. other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any spill or loss of any product, by-product, intermediate product, oils, solvents, waste material, or any other polluting substance which occurs to the surface waters or groundwaters of the state by calling the Department of Environmental Quality's 24-hour Emergency Response telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-8166); and within ten (10) days of the spill or loss, the permittee shall submit to the Jackson District Supervisor of the Surface Water Quality Division a full written explanation as to the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken, and schedule of implementation.

8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Jackson District Supervisor of the Surface Water Quality Division by telephone within 24-hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;

b. that the permitted wastewater treatment facility was, at the time, being properly operated; and

c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

PART II

Section C. Reporting Requirements

9. Bypass Prohibition and Notification

a. Bypass Prohibition - Bypass is prohibited unless:

1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and

(3) the permittee submitted notices as required under 9.b. or 9.c. below.

b. Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Jackson District Supervisor of the Surface Water Quality Division, if possible at least ten days before the date of the bypass, and provide information about the anticipated bypass as required by the Jackson District Supervisor. The Jackson District Supervisor may approve an anticipated bypass, after considering its adverse effects, if it will meet the three conditions listed in 9.a. above.

c. Notice of Unanticipated Bypass - The permittee shall submit notice to the Jackson District Supervisor of the Surface Water Quality Division of an unanticipated bypass by telephone at 517-780-7900 (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

d. Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Jackson District Supervisor of the Surface Water Quality Division, and at additional times as directed by the Jackson District Supervisor. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Jackson District Supervisor.

e. Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.10. of this permit.

f. Definitions

(1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

PART II

Section C. Reporting Requirements

10. Changes in Discharge

The permittee shall notify the Jackson District Supervisor of the Surface Water Quality Division, in writing, within 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register or priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information (The detectable level shall be defined as the Method Detection Limit (MDL) as given in Appendix B to Part 136, Federal Register, Vol. 49, No. 209, October 26, 1984, pp. 43430-31.); or 3) any chemical at levels greater than five times the average level reported in the application submitted on February 14, 1996, as amended on May 22, 1996, and August 5, 1996. Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

11. Changes in Facility Operations

Any anticipated facility expansion, production increases, or process modification which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application to the Jackson District Supervisor of the Surface Water Quality Division or, by notice to the Jackson District Supervisor if the following conditions are met: 1) the changes will not result in the discharge of wastewater not currently authorized or at volumes greater than currently authorized by this permit; 2) the changes will not violate the effluent limitations specified in this permit; and 3) the changes will not require notification pursuant to Part II.C.10. Following such notice, the permit may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

12. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, 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 Jackson District Supervisor of the Surface Water Quality Division 30 days prior to the actual transfer of ownership or control.

PART II

Section D. Management Responsibilities

1. Duty to Comply

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.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the Michigan Act and/or the Federal Act and constitutes grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of an application for permit renewal.

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Michigan Department of Environmental Quality, as required by Sections 3110 and 4104 of the Michigan Act.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; 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.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

6. Containment Facilities

The permittee shall provide 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 Part 5 Rules (Rules 323.1151 through 323.1169 of the Michigan Administrative Code). For a POTW, these facilities shall be approved under Part 41 of the Michigan Act.

PART II

Section D. Management Responsibilities

7. Waste Treatment Residues

Solids, sludges, biosolids, filter backwash, scrubber water or other pollutants resulting from treatment or control of wastewaters shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Michigan Department of Environmental Quality, any agent appointed by the Department or the Regional Administrator, upon the presentation of 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 process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (Rule 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal 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 Federal Act and Sections 3112, 3115, 4106 and 4110 of the Michigan Act.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge must be authorized by a groundwater discharge permit issued pursuant to the Michigan Act.

2. Facility Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities. Approval for such construction for a POTW must be by permit issued under Part 41 of the Michigan Act. Approval for such construction for a mobile home park, campground or marina shall be from the Drinking Water and Radiological Protection Division -- Environmental Health, Michigan Department of Environmental Quality. Approval for such construction for a hospital, nursing home or extended care facility shall be from the Division of Health Facility Services -- Health Facility Evaluation Section, Michigan Department of Consumer and Industry Services upon request.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), 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.

4. 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 may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

5. 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 Federal Act.

6. 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 violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals from other units of government as may be required by law.

7

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W. River Road

Battle Creek, MI 49015

March 29, 1990

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

RE: Violation Report

Dear Mr. Hosking:

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. This report is merely informational but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
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> Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC in a 6-month period.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 03-29-90

REPORT FOR 02/01/90 TO 02/28/90

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- MPC	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
-MICHIGAN PAPERBOARD CORP.								
	00310-BOD-5 DAY	02/01/90	NONE	6500.0	900.00	7090.92		
	00530-SUSPENDED SOLIDS	02/03/90	NONE	10000.0	1904.00	12381.14		
		02/26/90	NONE	10000.0	2280.00	12494.89		

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W. River Road

Battle Creek, MI 49015

April 18, 1990

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED Ø4-18-9Ø

REPORT FOR Ø3/Ø1/9Ø TO Ø3/31/9Ø
COMPANY I D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	ØØ53Ø-SUSPENDED SOLIDS	Ø3/Ø9/9Ø	NONE	1ØØØØ Ø	289Ø ØØ	14365.15		
		Ø3/31/9Ø	NONE	1ØØØØ Ø	2453.ØØ	1Ø333.35		

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W River Road

Battle Creek, MI 49015

May 24, 1990

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 05-22-90
REPORT FOR 04/01/90 TO 04/30/90
COMPANY I.D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC	-MICHIGAN PAPERBOARD CORP.							
	00530-SUSPENDED SOLIDS	04/06/90	NONE	10000.0	1400.00	10555.10		
		04/11/90	NONE	10000.0	2480.00	14643.71		

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Kenneth H. Tsuchiyama, Director

Gregory N. Zanotti, P.E., City Engineer

Linda L. Ross-Sides, Deputy Director/Operations

May 29, 1990

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: NOTICE OF NONCOMPLIANCE

Your facility has failed to meet the requirements of Section 1042.29 of the Codified Ordinance of Battle Creek which regulates sewer use.

Please find attached a copy of the Effluent Compliance Report which was compiled for your particular facility. This report was completed using the data collected by the Industrial Surveillance Program.

This Notice of Noncompliance requires you to determine what corrections must be made by your facility to begin complying with the limits outlined in your facility's Discharge Authorization. You will submit to the City of Battle Creek a letter outlining the problem area, the probable solution and a projected timetable for when these corrections will be made. This letter should be received by the Industrial Surveillance Program before August 24, 1990. Failure to address this request may result in further enforcement action. This letter should be addressed to:

City of Battle Creek
Attn: Industrial Surveillance
2000 W. River Road
Battle Creek, Michigan 49015

Your cooperation in attending to this matter is greatly appreciated. If you have any questions regarding this

Director (616) 966-3343

City Engineer	(616) 966-3343	Public Service Division	(616) 966-3507
Deputy Director	(616) 966-3479	Wastewater Division	(616) 966-3513
Engineering Division	(616) 966-3343	Water Division	(616) 966-3496

P.O. Box 1717, Battle Creek, Michigan 49016

notice, please contact the Industrial Surveillance personnel at 966-3513.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

attachment
cc: file

Industrial Users Effluent Compliance Report
Reporting Period: 11/Ø1/89 - Ø4/3Ø/9Ø

Industrial User: MICHIGAN PAPERBOARD CORP.
Industrial User Code: 159 Outfall: FAC

Parameters	Compliance Status
2,4,6-Trichlorophenol	C
2,4-Dichlorophenol	C
2-Chlorophenol	C
BOD5	SNC
Flow, total	C
Pentachlorophenol	C
Phenol (4AAP)	C
TSS	I
Zinc	C

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Kenneth H. Tsuchiyama, Director

Gregory N Zanotti, P E., City Engineer

Linda L Ross Sides, Deputy Director/Operations

August 13, 1990

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

Director (616) 966-3343

City Engineer	(616) 966-3343	Public Service Division	(616) 966-3507
Deputy Director	(616) 966-3479	Wastewater Division	(616) 966-3513
Engineering Division	(616) 966-3343	Water Division	(616) 966-3496

P.O. Box 1717, Battle Creek, Michigan 49016

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 08-10-90 PAGE NUMBER 11
REPORT FOR 07/01/90 TO 07/31/90
COMPANY I.D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	00530-SUSPENDED SOLIDS	07/03/90	NONE	10000.0	1787.00	11329.70		
		07/07/90	NONE	10000.0	1400.00	11762.40		
		07/08/90	NONE	10000.0	2860.00	13531.47		
		07/09/90	NONE	10000.0	1910.00	14490.97		

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Kenneth H. Tsuchiyama, Director

Gregory N. Zanotti, P.E., City Engineer

Linda L. Ross-Sides, Deputy Director/Operations

September 17, 1990

Rec'd 09/19/90

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael Andrews
Pretreatment Coordinator

cc. file

Director (616) 966-3343

City Engineer	(616) 966-3343	Public Service Division	(616) 966-3507
Deputy Director	(616) 966-3479	Wastewater Division	(616) 966-3513
Engineering Division	(616) 966-3343	Water Division	(616) 966-3496

P.O. Box 1717, Battle Creek, Michigan 49016

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 09-14-90

REPORT FOR 08/01/90 TO 08/31/90

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	00530-SUSPENDED SOLIDS	08/07/90	NONE	10000.0	1470.00	12058	74	

City of Battle Creek
WASTEWATER DIVISION
2000 W River Road
Battle Creek MI 49015

MICHIGAN PAPERBOARD CORPORATION
ATTN MR JIM HOSKING
79 EAST FOUNTAIN STREET
BATTLE CREEK MI 49017-4198

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W. River Road

Battle Creek, MI 49015

11/28/90

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 11-26-90

REPORT FOR 10/01/90 TO 10/31/90

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	00530-SUSPENDED SOLIDS	10/05/90	NONE	10000.0	1995.00	12240.80		
		10/07/90	NONE	10000.0	1380.00	12799.38		

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W. River Road

Battle Creek, MI 49015

1991
January Ø1, 199Ø

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 01-10-91

REPORT FOR 12/01/90 TO 12/31/90

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	00530-SUSPENDED SOLIDS	12/06/90	NONE	10000.0	1228.00	13011.85		
		12/10/90	NONE	10000.0	1380.00	13249.39		
		12/23/90	NONE	10000.0	2065.00	22211.34		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 02-15-91

REPORT FOR 01/01/91 TO 01/31/91

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.							
00310-BOD-5 DAY	01/11/91	NONE	6500.0	1530.00	9317.50		
	01/18/91	NONE	6500.0	1170.00	7329.08		
	01/19/91	NONE	6500.0	1350.00	8049.06		
	01/20/91	NONE	6500.0	1155.00	7333.37		
00530-SUSPENDED SOLIDS	01/04/91	NONE	10000.0	2593.00	17973.05		
	01/05/91	NONE	10000.0	1455.00	13245.03		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED Ø3-26-91

REPORT FOR Ø2/Ø1/91 TO Ø2/28/91

COMPANY I.D NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.							
ØØ31Ø-BOD-5 DAY	Ø2/Ø2/91	NONE	65ØØ Ø	96Ø.ØØ	6715.77		
	Ø2/18/91	NONE	65ØØ.Ø	885.ØØ	6616.98		
	Ø2/27/91	NONE	65ØØ.Ø	595 ØØ	7131.32		
	Ø2/28/91	NONE	65ØØ.Ø	63Ø ØØ	9334.61		
ØØ53Ø-SUSPENDED SOLIDS	Ø2/28/91	NONE	1ØØØØ.Ø	78Ø.ØØ	11557.14		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 04-26-91

REPORT FOR 03/01/91 TO 03/31/91

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	00310-BOD-5 DAY	03/18/91	NONE	6500.0	870.00	7361.73		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED Ø6-11-91
REPORT FOR Ø5/Ø1/91 TO Ø5/31/91
COMPANY I.D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION-	PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.								
	ØØ31Ø-BOD-5 DAY	Ø5/24/91	NONE	65ØØ.Ø	1245.ØØ	7456.25		
	ØØ53Ø-SUSPENDED SOLIDS	Ø5/13/91	NONE	1ØØØØ.Ø	226Ø.ØØ	17163.35		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED Ø7-15-91
REPORT FOR Ø6/Ø1/91 TO Ø6/3Ø/91
COMPANY I.D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- PARAMETER-DESCRIPTION- MPC -MICHIGAN PAPERBOARD CORP.	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
ØØ31Ø-BOD-5 DAY	Ø6/12/91	NONE	65ØØ.Ø	93Ø.ØØ	6854.93		
	Ø6/17/91	NONE	65ØØ.Ø	84Ø.ØØ	7157.62		
	Ø6/21/91	NONE	65ØØ.Ø	93Ø.ØØ	8538.8Ø		
	Ø6/26/91	NONE	65ØØ.Ø	99Ø.ØØ	7425.16		
	Ø6/27/91	NONE	65ØØ.Ø	114Ø.ØØ	1ØØ64.74		
	Ø6/28/91	NONE	65ØØ.Ø	114Ø.ØØ	1236Ø.83		
	Ø6/29/91	NONE	65ØØ.Ø	69Ø.ØØ	8661.25		
	Ø6/3Ø/91	NONE	65ØØ.Ø	96Ø.ØØ	1Ø4Ø5.92		
ØØ53Ø-SUSPENDED SOLIDS	Ø6/13/91	NONE	1ØØØØ.Ø	226Ø.ØØ	12541.73		
	Ø6/17/91	NONE	1ØØØØ.Ø	126Ø.ØØ	1Ø736.43		
	Ø6/21/91	NONE	1ØØØØ.Ø	243Ø.ØØ	22311.Ø6	6/21	filler side flood
	Ø6/22/91	NONE	1ØØØØ.Ø	123Ø.ØØ	1Ø419.25	6/22	start up
	Ø6/27/91	NONE	1ØØØØ.Ø	312Ø.ØØ	27545.62		
	Ø6/28/91	NONE	1ØØØØ.Ø	167Ø.ØØ	181Ø7.53		
	Ø6/29/91	NONE	1ØØØØ.Ø	1Ø1Ø.ØØ	12678.Ø6		
	Ø6/3Ø/91	NONE	1ØØØØ.Ø	1665.ØØ	18Ø47.76		
Ø1Ø92-ZINC-ZN-TOT	Ø6/3Ø/91	2.5	NONE	4.7Ø	5Ø.95		

13 flow 950 00 gals
flows over 1,000,000 gals / day
28 " " "
29 " " " " "
20 " " " "
17 flow 970,000 gal

8 [illegible]
8 SS
ZINC

CITY OF BATTLE CREEK, MICHIGAN

WASTEWATER DIVISION

OFFICE OF THE SUPERINTENDENT

Cortland V. Overmyer

(616) 966-3513

2000 W. River Road

Battle Creek, MI 49015

February 20, 1991

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

March 26, 1991

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V Overmyer Superintendent

April 26, 1991

Michigan Paperboard Corporation
ATTN· Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road Battle Creek MI 49015 1181 (616) 966 3513

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

Ø6/12/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC in a 6-month period.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

Ø7/17/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

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Michael G. Andrews
Pretreatment Coordinator

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

Ø8/19/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

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Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 08-19-91
REPORT FOR 07/01/91 TO 07/31/91

COMPANY I.D. NUMBER 159
COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- / PARAMETER-DESCRIPTION-	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
MPC -MICHIGAN PAPERBOARD CORP.							
00310-BOD-5 DAY	07/01/91	NONE	6500.0	1200.00	8287.63		
	07/16/91	NONE	6500.0	810.00	7544.43		
	07/25/91	NONE	6500.0	990.00	6633.35		
9 days	07/26/91	NONE	6500.0	750.00	9849.75		
	07/27/91	NONE	6500.0	750.00	7017.48		
	07/28/91	NONE	6500.0	1020.00	9428.09		
	07/29/91	NONE	6500.0	700.00	7084.41		
	07/30/91	NONE	6500.0	730.00	6948.46		
	07/31/91	NONE	6500.0	682.00	7018.27		
00530-SUSPENDED SOLIDS	07/01/91	NONE	10000.0	3000.00	20719.06		
	07/08/91	NONE	10000.0	4570.00	12116.38		
	07/09/91	NONE	10000.0	2690.00	10907.70		
	07/15/91	NONE	10000.0	1740.00	12240.53		
	07/16/91	NONE	10000.0	2190.00	20397.90		
19 days	07/17/91	NONE	10000.0	2500.00	10625.16		
	07/18/91	NONE	10000.0	2066.00	14359.85		
	07/19/91	NONE	10000.0	1440.00	10976.77		
	07/20/91	NONE	10000.0	1730.00	13793.36		
	07/21/91	NONE	10000.0	4120.00	29076.11		
	07/22/91	NONE	10000.0	2700.00	21067.84		
	07/23/91	NONE	10000.0	2210.00	16022.42		
	07/24/91	NONE	10000.0	3030.00	25737.70		
	07/25/91	NONE	10000.0	2060.00	13802.73		
	07/26/91	NONE	10000.0	2110.00	27710.63		
	07/27/91	NONE	10000.0	1400.00	13099.30		

CITY OF BATTLE CREEK

INDUSTRY PERMIT LIMIT VIOLATIONS REPORT

DATE PRINTED 08-19-91 PAGE NUMBER 10

REPORT FOR 07/01/91 TO 07/31/91

COMPANY I.D. NUMBER 159

COMPANY NAME MICHIGAN PAPERBOARD CORPORATION

LOCATION-DESCRIPTION- MPC	PARAMETER-DESCRIPTION- -MICHIGAN PAPERBOARD CORP.	VIOLATION --DATE---	PERMIT LIMITS CONCENT.	PERMIT LIMITS MASS	ACTUAL CONCENTRATION	ACTUAL MASS	SURCHARGE COST	SURCHARGE RATE
	00530-SUSPENDED SOLIDS	07/28/91	NONE	10000.0	4440.00	41039.90		
		07/29/91	NONE	10000.0	1990.00	20139.97		
		07/31/91	NONE	10000.0	1075.00	11062.53		

7/17 # down

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

10/01/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

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Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

Ø8/Ø1/91 Thru Ø8/3Ø/91

* Ave. flow for August 1,022,474 gals/day

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	FLOW	Result	Daily Limits Minimum	Daily Limits Maximum	Daily Limits TRC
Ø8/Ø1/91	BOD5		7454.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS (SEWER)	1,24130	12423.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/Ø2/91	TSS	1.13080	1Ø94Ø.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/Ø3/91	TSS	.93640	1Ø777.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/Ø4/91	BOD5 (SEWER)	1.05680	6875.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS		26265.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/Ø7/91	TSS (SEWER	.89410	1Ø663.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/Ø8/91	TSS (SEWER)	1.00950	17512.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/Ø9/91	TSS (SEWER)	.85320	1Ø816.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/1Ø/91	BOD5		7657.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
Ø8/12/91	TSS	.95480	1Ø67Ø.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/13/91	BOD5	.93540	7Ø21.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS		23638.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/14/91	TSS (SEWER)	.67760	11585.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/15/91	BOD5		9Ø18.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ*
Ø8/16/91	BOD5		7Ø81.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
Ø8/17/91	BOD5		6573.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS	.93830	12912.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/18/91	BOD5	1.13420	9857.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ*
	TSS		17121.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/19/91	BOD5		6571.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
Ø8/2Ø/91	BOD5	1.26960	7412.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS		1673Ø.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/21/91	BOD5 (SEWER)	1.50430	6775.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS		21328.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/23/91	BOD5 (SEWER)	1.55910	6892.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ

* Limit Violated
All results expressed per units established by the Discharge Authorization.

Ø8/Ø1/91 Thru Ø8/3Ø/91

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	FLOW	Result	Daily Limits Minimum	Daily Limits Maximum	Daily Limits TRC
Ø8/23/91	TSS (SEWER)	1,55910	12613.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/24/91	TSS (SEWER)	1,05750	13152.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/26/91	TSS	.90860	1Ø457.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ
Ø8/28/91	BOD5	1.04320	6657.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ
	TSS		12139.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	12ØØØ.ØØØ*
Ø8/3Ø/91	BOD5		6684.ØØØ	Ø.ØØØ	65ØØ.ØØØ*	78ØØ.ØØØ

* Limit Violated
All results expressed per units established by the Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V Overmyer, Superintendent

10/15/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Attached is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If you have any questions, feel free to contact me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015 1181 (616) 966 3513

09/01/91 Thru 09/30/91

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Parameter	Date	Result	Daily Limits Minimum	Daily Limits Maximum	TRC
BOD5	09/08/91	9093.000	0.000	6500.000*	9100.000
	09/14/91	8246.000	0.000	6500.000*	9100.000
	09/15/91	6555.000	0.000	6500.000*	9100.000
	09/16/91	7362.000	0.000	6500.000*	9100.000
	09/17/91	7099.000	0.000	6500.000*	9100.000
	09/19/91	6667.000	0.000	6500.000*	9100.000
	09/20/91	7280.000	0.000	6500.000*	9100.000
	09/21/91	7342.000	0.000	6500.000*	9100.000
	09/22/91	8553.000	0.000	6500.000*	9100.000
	09/25/91	6833.000	0.000	6500.000*	9100.000
	09/27/91	6610.000	0.000	6500.000*	9100.000
	09/28/91	6559.000	0.000	6500.000*	9100.000
	09/29/91	6982.000	0.000	6500.000*	9100.000
TSS	09/01/91	90753.000	0.000	10000.000*	12000.000*
	09/02/91	11096.000	0.000	10000.000*	12000.000
	09/08/91	44870.000	0.000	10000.000*	12000.000*
	09/11/91	11369.000	0.000	10000.000*	12000.000
	09/12/91	17697.000	0.000	10000.000*	12000.000*
	09/13/91	18403.000	0.000	10000.000*	12000.000*
	09/21/91	22842.000	0.000	10000.000*	12000.000*
	09/22/91	25486.000	0.000	10000.000*	12000.000*
	09/23/91	15127.000	0.000	10000.000*	12000.000*
	09/24/91	11445.000	0.000	10000.000*	12000.000
	09/25/91	10863.000	0.000	10000.000*	12000.000
	09/26/91	10510.000	0.000	10000.000*	12000.000
	09/29/91	16574.000	0.000	10000.000*	12000.000*

* Limit Violated
All results expressed in units established by the Discharge Authorization.

City of Battle Creek
WASTEWATER DIVISION
2000 W River Road
Battle Creek, MI 49015

BATTLE CREEK
OCT 10
1993

MICHIGAN PAPERBOARD CORPORATION
ATTN MR JIM HOSKING
79 EAST FOUNTAIN STREET
BATTLE CREEK MI 49Ø17-4198

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

11/14/91

Michigan Paperboard Corporation
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79 E. Fountain St.
Battle Creek, Michigan 49017-4198

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Pretreatment Coordinator

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

10/01/91 To 10/31/91

NPDES #: [illegible] Microbiological Corp
Site # [illegible] Leading Edge Semiconductor

Date	Parameter	Result	Daily Limits Minimum	Daily Limits Maximum	TFC
10/04/91	BOD5	6352.000	0.000	6500.000*	7000.000
10/05/91	BOD5	1702.000	0.000	6500.000*	7000.000
10/06/91	BOD5	707.000	0.000	6500.000*	7000.000
10/07/91	BOD5	[illegible]	0.000	6500.000*	7000.000
10/09/91	TSS	11[illegible]7.000	0.000	10000.000*	12000.000
10/03/91	BOD5	11547.000	0.000	6500.000*	7000.000*
	TSS	[illegible]9[illegible].000	0.000	10000.000*	12000.000*
10/10/91	BOD5	7071.000	0.000	6500.000*	7000.000*
	TSS	1784.000	0.000	10000.000*	12000.000*
10/11/91	BOD5	7040.000	0.000	6500.000*	7000.000
	TSS	1754.000	0.000	10000.000*	12000.000*
10/12/91	BOD5	[illegible]	0.000	[illegible].000*	[illegible]
	TSS	[illegible].000	0.000	10000.000*	12000.000*
10/13/91	BOD5	[illegible]	0.000	[illegible].000*	[illegible]
	TSS	[illegible].000	0.000	10000.000*	12000.000*
10/14/91	BOD5	[illegible]	0.000	[illegible]*	[illegible]*
	TSS	[illegible].000	0.000	10000.000*	12000.000*
10/15/91	pH	10.[illegible]	[illegible]	[illegible]*	11.400
10/16/91	TSS	12501.000	0.000	10000.000*	12000.000*
10/17/91	BOD5	12508.000	0.000	6500.000*	7000.000*
	TSS	46242.000	0.000	10000.000*	12000.000*
10/18/91	BOD5	14012.000	0.000	6500.000*	7000.000*
	TSS	57640.000	0.000	10000.000*	12000.000*
10/03/91	BOD5	13449.000	0.000	6500.000*	7000.000*
	TSS	11797.000	0.000	10000.000*	12000.000
10/30/91	BOD5	525.000	0.000	[illegible].000*	[illegible].000
10/31/91	BOD5	9447.000	0.000	6500.000*	7000.000*

* Limit violated
All results expressed in units established by the discharge authorization

10/01/91 Thru 10/31/91

IU # 119 Michigan Paperboard Corp.
Site #. 1 Loading dock sample station

Date	Parameter	Result	Daily Limits Minimum	Maximum	TPC
10/21/91	TSS	17205.000	0.000	10000.000*	12000.000*
10/23/91	BOD5	7015.000	0.000	6500.000*	7800.000
10/28/91	BOD5	7658.000	0.000	6500.000*	7800.000
	TSS	12402.000	0.000	10000.000*	12000.000*
10/31/91	TSS	11112.000	0.000	10000.000*	12000.000

* Limit violated
All results expressed in units established by the discharge authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V Overmyer, Superintendent

12/Ø6/91

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

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Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

[illegible]

[illegible] Industrial Monitoring Report Page [illegible]

[illegible] 01/91 Thru 11/30/91

TN #: [illegible] Michigan Petroleum Corp.
[illegible] # 1 Location of Sample Station

Parameter	Date	Result	Daily Limits Minimum	Maximum	TF
FLOW	11/01/91	6625.000	0.000	6500.000*	9100.000
	11/02/91	7135.000	0.000	5[illegible].000*	9100.000
	11/03/91	9105.000	0.000	6700.000*	9100.000
	11/05/91	7256.000	0.000	6500.000*	9100.000
	11/12/91	6860.000	0.000	6500.000*	9100.000
	11/13/91	6847.000	0.000	6500.000*	9100.000
	11/15/91	8550.000	0.000	6500.000*	9100.000
	11/18/91	5547.000	0.000	6500.000*	9100.000
	11/21/91	7614.000	0.000	6500.000*	9100.000
	11/23/91	6603.000	0.000	6500.000*	9100.000
	11/24/91	2156.000	0.000	6500.000*	9100.000*
TSS	11/01/91	15415.000	0.000	10000.000*	12000.000*
	11/05/91	22216.000	0.000	10000.000*	12000.000*
	11/07/91	16[illegible].000	0.000	10000.000*	12000.000*
	11/14/91	11[illegible].000	0.000	10000.000*	12000.000
	11/15/91	6915.000	0.000	10000.000*	12000.000*
	11/[illegible]/91	14782.000	0.000	10000.000*	12000.000*
	11/[illegible]/91	1[illegible]26.000	0.000	10000.000*	12000.000*
	11/30/91	11[illegible].000	0.000	10000.000*	12000.000

* Limit violation
All results reported in units established by the Discharge Authorization

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V Overmyer, Superintendent

Ø1/1Ø/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: Industrial User Discharge Authorization

In May, 1988 your facility received a Discharge Authorization outlining your responsibilities under the City of Battle Creek's Industrial Surveillance Program. This authorization was developed to give each local industry a single working document, specifically designed for each industrial facility.

The Environmental Protection Agency (EPA) has required the City strengthen its control mechanism system. Enclosed are copies of documents which are required for the City to comply with these new requirements. The changes are as follows:

1) Three copies of a certification statement have been enclosed. This certification statement is a new requirement established by the EPA's 4Ø3 regs. The EPA requires that all reports submitted to the City's Industrial Surveillance Program be accompanied by a signed copy of this statement. It is the user's responsibility to obtain additional copies of this document for later use.

2) Three copies of a sampling results input form have been included. These input forms are to be used by the individual user to submit self-monitoring data to the City. Each user should transpose the necessary information to the input form, sign the bottom, and send the completed form to the City on the same reporting schedule that was established by

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

your Discharge Authorization. These forms will simplify the City's efforts to track the regulated parameters. Again, it will be the users responsibility to obtain additional copies of this form. These forms should also be used when it is necessary for the industry to repeat its self-monitoring testing because a violation was noted, as specified by Part III (5) of your Discharge Authorization.

3) An updated page nine has been enclosed. This page has had Section 12 added, this section explains that your facility's Discharge Authorization is not transferable. Please remove the original page nine and replace it with the updated version. This will keep your Discharge Authorization up-to-date.

If you have any questions, please feel free to contact me at 616-966-3513 or written questions can be submitted to:

City of Battle Creek
ATTN: Industrial Surveillance
2000 W. River Rd.
Battle Creek, Michigan 49015-1181

Thank you for your continued cooperation with the City of Battle Creek's Industrial Surveillance Program.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

Attachment
cc. file

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Cortland V. Overmyer, Superintendent

01/14/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
>
> Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC in a 6-month period.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

12/01/91 Thru 12/31/91

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	Result	Daily Limits Minimum	Daily Limits Maximum	TRC
12/01/91	BOD5	6639.000	0.000	6500.000*	7800.000
12/02/91	TSS	14693.000	0.000	10000.000*	12000.000*
12/04/91	TSS	10668.000	0.000	10000.000*	12000.000*
12/05/91	TSS	13252.000	0.000	10000.000*	12000.000*
12/08/91	TSS	11480.000	0.000	10000.000*	12000.000
12/11/91	BOD5	6947.000	0.000	6500.000*	7800.000
12/12/91	BOD5	9237.000	0.000	6500.000*	7800.000*
12/19/91	BOD5	7550.000	0.000	6500.000*	7800.000
12/22/91	BOD5	9988.000	0.000	6500.000*	7800.000*
	TSS	26776.000	0.000	10000.000*	12000.000*

* Limit Violated
All results expressed in units established by the Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Ø2/18/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. **This report is merely informational** but if subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance is defined as:

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

01/01/92 Thru 01/31/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Parameter	Date	Result	Daily Limits Minimum	Daily Limits Maximum	TPC
BOD5	01/04/92	7890.000	0.000	6500.000*	9100.000
	01/10/92	5760.000	0.000	6500.000*	9100.000
TSS	01/04/92	39010.000	0.000	10000.000*	12000.000*
	01/07/92	12580.000	0.000	10000.000*	12000.000*
	01/19/92	11164.000	0.000	10000.000*	12000.000
	01/25/92	30717.000	0.000	10000.000*	12000.000*
	01/28/92	17384.000	0.000	10000.000*	12000.000*
	01/30/92	19903.000	0.000	10000.000*	12000.000*

* Limit Violated
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

[redacted]

Ø3/17/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

02/01/92 Thru 02/29/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	Result	Daily Limits Minimum	Daily Limits Maximum	TRC
/03/92	TSS	10107.000	0.000	10000.000*	12000.000
/09/92	TSS	10956.000	0.000	10000.000*	12000.000
/13/92	TSS	13010.000	0.000	10000.000*	12000.000*
/14/92	TSS	15016.000	0.000	10000.000*	12000.000*
/24/92	BOD5	6509.000	0.000	6500.000*	9100.000
/27/92	TSS	16652.000	0.000	10000.000*	12000.000*

Limit Violated
ll results reported in units established by Discharge Authorization.

City of Battle Creek
WASTEWATER DIVISION
2000 W River Road
Battle Creek, MI 49015

BATTLE CREEK
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MICH

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CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

[redacted]

03/27/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: NOTICE OF NONCOMPLIANCE

Your facility has failed to meet the requirements of Section 1042.29 of the Codified Ordinances of City of Battle Creek which regulates sewer use.

Please find attached copies of the Effluent Compliance Report and the data which was compiled for your particular facility. These reports were completed using the data collected by the Industrial Surveillance Program.

This Notice of Noncompliance requires you to determine what corrections must be made by your facility to begin complying with the limits outlined in your facility's Discharge Authorization. You will submit to the City of Battle Creek a letter outlining the problem area, the probable solution, a projected compliance timetable to implement corrections and a final date when compliance will be achieved.

This letter should be received by the Industrial Surveillance Program before May 1, 1992. As the dates in the proposed compliance schedule (timetable) occur, you will be required to submit update reports to verify that progress is being made towards compliance. If a report is not received, your facility will be considered in violation. Failure to address this request or to submit the necessary reports will result in further enforcement action. This

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966 3513

letter and any subsequent reports should be submitted to:

City of Battle Creek
Attn: Industrial Surveillance
2000 W. River Road
Battle Creek, Michigan 49015

Your cooperation in attending to this matter is greatly appreciated. If you have any questions regarding this notice, please contact the Industrial Surveillance personnel at 966-3513.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

attachment
cc: file

Ø7/Ø1/91 Thru 12/31/91

IU #: 159 Michigan Paperboard Corp.

Site: 1 Loading dock sample station.

Parameter	Compliance Status
Flow, total	NL
BOD5	SNC
TSS	SNC
pH	I
Phenol	C
Zinc	C
2-Chloro	C
2,4-Dichloro	C
2,4,6-Trichloro	C
Pentachloro	C

Site: S Self-Monitoring Results

Parameter	Compliance Status
Phenol	C
Zinc	C
2-Chloro	C
2,4-Dichloro	C
2,4,6-Trichloro	C
Pentachloro	C

Compliance Codes:
C = Consistent Compliance I = Infrequent Noncompliance
SNC = Significant Noncompliance NL = No Limitations

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

[redacted]

Ø4/27/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1Ø42.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($1Ø,ØØØ) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1Ø42 (Sewers).

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015 1181 (616) 966 3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

03/01/92 Thru 03/31/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Parameter	Date	Result	Daily Limits Minimum	Daily Limits Maximum	TRC
TSS	03/11/92	29273.000	0.000	10000.000*	12000.000*
	03/12/92	14787.000	0.000	10000.000*	12000.000*
	03/14/92	12389.000	0.000	10000.000*	12000.000*

* Limit Violated
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

05/14/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

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If you have any questions, feel free to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

Ø4/Ø1/92 Thru Ø4/3Ø/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Parameter	Date	Result	Daily Limits Minimum	Daily Limits Maximum	Daily Limits TRC
TSS	Ø4/Ø1/92	1Ø517.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/Ø2/92	12253.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/Ø7/92	25327.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ*
	Ø4/11/92	12262.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/18/92	15537.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ*
	Ø4/19/92	18543.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ*
	Ø4/2Ø/92	18293.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ*
	Ø4/21/92	138Ø5.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/22/92	11614.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/23/92	12546.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/24/92	13Ø79.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
	Ø4/25/92	15251.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ*
	Ø4/26/92	13549.ØØØ	Ø.ØØØ	1ØØØØ.ØØØ*	14ØØØ.ØØØ
pH	Ø4/Ø3/92	8552.ØØØ	5.5ØØ	9.5ØØ*	9.5ØØ*

* Limit Violated
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

06/16/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

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If you have any questions, feel free to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

05/01/92 thru 05/31/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	Result	Daily Limits Minimum	Daily Limits Maximum	TRC
05/07/92	TSS	14491.000	0.000	10000.000*	14000.000*
05/12/92	TSS	38219.000	0.000	10000.000*	14000.000*
05/13/92	TSS	17046.000	0.000	10000.000*	14000.000*
05/14/92	TSS	17499.000	0.000	10000.000*	14000.000*
05/15/92	TSS	16558.000	0.000	10000.000*	14000.000*
05/17/92	TSS	12784.000	0.000	10000.000*	14000.000
05/22/92	TSS	10007.000	0.000	10000.000*	14000.000
05/23/92	TSS	10028.000	0.000	10000.000*	14000.000
05/24/92	TSS	16158.000	0.000	10000.000*	14000.000*
05/25/92	TSS	34091.000	0.000	10000.000*	14000.000*
05/26/92	TSS	10049.000	0.000	10000.000*	14000.000
05/31/92	BOD5	7537.000	0.000	6500.000*	9100.000

* Limit Violated
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Ø7/17/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

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If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

06/01/92 Thru 06/30/92

IU #: 159 Michigan Paperboard Corp.
Site #: 1 Loading dock sample station.

Date	Parameter	Result	Daily Limits Minimum	Daily Limits Maximum	Daily Limits TRC
06/03/92	TSS	13747.000	0.000	10000.000*	14000.000
06/07/92	TSS	18292.000	0.000	10000.000*	14000.000*
06/09/92	TSS	12160.000	0.000	10000.000*	14000.000
06/15/92	BOD5	6740.000	0.000	6500.000*	9100.000
06/16/92	BOD5	8750.000	0.000	6500.000*	9100.000
	TSS	10857.000	0.000	10000.000*	14000.000
06/17/92	TSS	11468.000	0.000	10000.000*	14000.000
06/21/92	TSS	15023.000	0.000	10000.000*	14000.000*
06/27/92	TSS	10034.000	0.000	10000.000*	14000.000
06/29/92	TSS	25579.000	0.000	10000.000*	14000.000*
06/30/92	TSS	17343.000	0.000	10000.000*	14000.000*

* Limit Violated
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

08/26/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

07/01/92 thru 07/31/92

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	Results
BOD5	6,500.000/3,250.000	07/07/92	7,189.000**
	6,500.000/3,250.000	07/27/92	6,990.000**
	Monthly Average (07/01/92 - 07/31/92)		4,926.548***
Tss	10,000.000/5,000.000	07/11/92	15,777.000***
	10,000.000/5,000.000	07/12/92	11,247.000**
	10,000.000/5,000.000	07/18/92	12,243.000**
	Monthly Average (07/01/92 - 07/31/92)		5,882.161**

*Violation of Minimum Limit
**Violation of Maximum Limit
***Violation of TRC Limit
All Results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

09/15/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

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Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats, Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966 3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

08/01/92 thru 08/31/92

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	Results
	Monthly Average (08/01/92 - 08/31/92)		4,465.67/**
TSS	10,000.000/5,000.000	08/01/92	13,870.000**
	10,000.000/5,000.000	08/09/92	10,883.000**
	10,000.000/5,000.000	08/10/92	15,447.000***
	10,000.000/5,000.000	08/11/92	17,789.000***
	10,000.000/5,000.000	08/30/92	17,410.000***
	Monthly Average (08/01/92 - 08/31/92)		6,768.255**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

10/16/92

Michigan Paperboard Corporation
ATTN: Mr. Jim Hosking
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015 1181 (616) 966 3513

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If you have any questions, feel free to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

[illegible] Battle Creek
[illegible] Violation Report

[illegible] Thru 09 [illegible] 92

[illegible] Paperboard [illegible]
[illegible] # [illegible] Dock Sample Station

Parameter	Limits (Min [illegible])	Date	Result
[illegible]	6 300 000 [illegible] 000	09 0[illegible] 92	6 [illegible] 000**
	6[illegible] 00.000 [illegible] 50 000	09 07 92	6,[illegible].000**
	00 000 3,250.000	09 23 92	[illegible],54[illegible].000**
	[illegible] 00 000 [illegible].000	09/26 9[illegible]	[illegible],44[illegible] 000**
	Monthly Average 09 01 92 09 30 92)		[illegible] 200***
T	10 000 000 [illegible].000.000	09 06 [illegible]	1[illegible].010 000**
	10 000 000 [illegible],000 000	09 07 92	11.[illegible] 000**
	10 000.000/ [illegible],000.000	09 1[illegible] 92	16,[illegible]30.000***
	10 000.000/5.000.000	09/1[illegible] 92	14,426.000***
	10 000.000 [illegible].000 000	09/14 92	12.[illegible]6.000**
	[illegible] 000 000/5.000.000	09/1[illegible] 92	11,[illegible] 000**
	Monthly Average 09 01 92 09 30/92		[illegible]11.700***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
[illegible] Results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

11/10/92

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, feel free to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

10/01/92 Thru 10/31/92

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	Results
BOD5	6,500.000/3,250.000	10/10/92	6,696.000**
	6,500.000/3,250.000	10/16/92	6,573.000**
	Monthly Average (10/01/92 - 10/31/92)		5,371.935***
TSS	10,000.000/5,000.000	10/01/92	10,213.000**
	10,000.000/5,000.000	10/02/92	10,672.000**
	10,000.000/5,000.000	10/04/92	10,377.000**
	10,000.000/5,000.000	10/05/92	11,732.000**
	10,000.000/5,000.000	10/07/92	15,440.000***
	10,000.000/5,000.000	10/10/92	11,347.000**
	10,000.000/5,000.000	10/12/92	15,784.000***
	10,000.000/5,000.000	10/15/92	11,203.000**
	10,000.000/5,000.000	10/16/92	32,153.000***
	10,000.000/5,000.000	10/17/92	10,091.000**
	10,000.000/5,000.000	10/19/92	15,145.000***
	10,000.000/5,000.000	10/20/92	11,779.000**
	10,000.000/5,000.000	10/22/92	12,603.000**
	10,000.000/5,000.000	10/23/92	28,589.000***
	10,000.000/5,000.000	10/24/92	17,824.000***
	10,000.000/5,000.000	10/25/92	19,990.000***
	10,000.000/5,000.000	10/26/92	14,903.000***
	10,000.000/5,000.000	10/27/92	11,910.000**
	10,000.000/5,000.000	10/28/92	25,558.000***
	10,000.000/5,000.000	10/30/92	17,787.000***
	Monthly Average (10/01/92 - 10/31/92)		13,260.419***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

12/08/92

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions do not hesitate to contact me.

Sincerely,

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Ø1/Ø6/93

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1Ø42.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($1Ø,ØØØ) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1Ø42 (Sewers).

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

12/01/92 Thru 12/31/92

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	Results
BOD5	6,500.000/3,250.000	12/16/92	7,016.000**
	6,500.000/3,250.000	12/19/92	12,789.000***
	6,500.000/3,250.000	12/22/92	8,495.000**
	Monthly Average (12/01/92 - 12/31/92)		5,139.226***
TSS	10,000.000/5,000.000	12/01/92	23,154.000***
	10,000.000/5,000.000	12/03/92	11,033.000**
	10,000.000/5,000.000	12/08/92	11,742.000**
	10,000.000/5,000.000	12/10/92	12,960.000**
	10,000.000/5,000.000	12/12/92	23,823.000***
	10,000.000/5,000.000	12/13/92	12,974.000**
	10,000.000/5,000.000	12/14/92	11,895.000**
	10,000.000/5,000.000	12/15/92	15,895.000***
	10,000.000/5,000.000	12/16/92	29,416.000***
	10,000.000/5,000.000	12/17/92	17,765.000***
	10,000.000/5,000.000	12/18/92	24,041.000***
	10,000.000/5,000.000	12/19/92	45,430.000***
	10,000.000/5,000.000	12/20/92	27,024.000***
	10,000.000/5,000.000	12/21/92	51,344.000***
	10,000.000/5,000.000	12/22/92	56,189.000***
	10,000.000/5,000.000	12/23/92	43,096.000***
	10,000.000/5,000.000	12/25/92	27,745.000***
	10,000.000/5,000.000	12/26/92	27,745.000***
	10,000.000/5,000.000	12/27/92	11,365.000**
	10,000.000/5,000.000	12/28/92	13,622.000**
	Monthly Average (12/01/92 - 12/31/92)		18,615.129***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

Ø2/Ø5/93

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: SUSPENDED SOLIDS VIOLATIONS

Enclosed are copies of reports concerning your facility's wastewater discharge to the City of Battle Creek's sanitary sewer system. Specifically the data deals with the months of October and December of 1992. This data shows a dramatic increase in the solids being discharged. The month of October had an 13,26Ø pounds per day average and December had a daily average of 18,615 pounds per day.
17,790 #/day ss.

I realize that improvements are being implemented at your facility to achieve effluent discharge compliance by July 1993. However solids discharge of the aforementioned magnitude cause operational problems at the City's wastewater treatment facility.

This letter is to inform you of the problems the Wastewater personnel are experiencing with these excessive solids and request that your facility make efforts to control the amount of solids being discharged.

Your continued cooperation with the City of Battle Creek's Industrial Surveillance Program is appreciated. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely

Mike

Michael G Andrews
Pretreatment Coordinator

cc. file

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

10/01/92 Thru 10/31/92

IU #: 158 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter: TSS Limits Max,Avg: 10,000.000/5,000.000

Date	Lab	Collect Method	Sample Type	Flow	Result
10/03/92	ISPP	Composite	Scheduled	0.00	8,562.000
10/04/92	ISPP	Composite	Scheduled	0.00	10,377.000**
10/05/92	ISPP	Composite	Scheduled	0.00	11,732.000**
10/06/92	ISPP	Composite	Scheduled	0.00	8,026.000
10/07/92	ISPP	Composite	Scheduled	0.00	15,440.000***
* 10/08/92	ISPP	Composite	Scheduled	0.00	9,950.000
10/09/92	ISPP	Composite	Scheduled	0.00	9,235.000
10/10/92	ISPP	Composite	Scheduled	0.00	11,347.000**
10/11/92	ISPP	Composite	Scheduled	0.00	9,914.000
10/12/92	ISPP	Composite	Scheduled	0.00	15,784.000***
10/13/92	ISPP	Composite	Scheduled	0.00	6,401.000
* 10/14/92	ISPP	Composite	Scheduled	0.00	9,670.000
10/15/92	ISPP	Composite	Scheduled	0.00	11,203.000**
* 10/16/92	ISPP	Composite	Scheduled	0.00	32,153.000***
* 10/17/92	ISPP	Composite	Scheduled	0.00	10,091.000**
10/18/92	ISPP	Composite	Scheduled	0.00	8,499.000
10/19/92	ISPP	Composite	Scheduled	0.00	15,145.000***
10/20/92	ISPP	Composite	Scheduled	0.00	11,779.000**
10/21/92	ISPP	Composite	Scheduled	0.00	7,912.000
10/22/92	ISPP	Composite	Scheduled	0.00	12,603.000**
10/23/92	ISPP	Composite	Scheduled	0.00	28,589.000***
10/24/92	ISPP	Composite	Scheduled	0.00	17,824.000***
10/25/92	ISPP	Composite	Scheduled	0.00	18,990.000***
10/26/92	ISPP	Composite	Scheduled	0.00	14,903.000***
10/27/92	ISPP	Composite	Scheduled	0.00	11,910.000**
10/28/92	ISPP	Composite	Scheduled	0.00	15,558.000***
10/29/92	ISPP	Composite	Scheduled	0.00	9,451.000
10/30/92	ISPP	Composite	Scheduled	0.00	17,787.000***
10/31/92	ISPP	Composite	Scheduled	0.00	8,353.000
		Monthly Average (10/01/92 - 10/31/92			13,260.419***

Parameter: pH Limits (Min)Max/Avg: (5.500)9.500/9.500

Date	Lab	Collect Method	Sample Type	Flow	Result
10/01/92	ISPP	Composite	Scheduled	0.00	7.800
10/02/92	ISPP	Composite	Scheduled	0.00	7.100
10/03/92	ISPP	Composite	Scheduled	0.00	7.700

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

12/01/92 Thru 12/31/92

TU #: 150 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter: TSS Limits Max/Avg: 10,000.000/5,000.000

	Date	Lab	Collect Method	Sample Type	Flow	Result
	12/03/92	ISPP	Composite	Scheduled	0.00	11,033.000**
	12/04/92	ISPP	Composite	Scheduled	0.00	8,471.000
	12/05/92	ISPP	Composite	Scheduled	0.00	9,100.000
	12/06/92	ISPP	Composite	Scheduled	0.00	7,270.000
	12/07/92	ISPP	Composite	Scheduled	0.00	6,873.000
	12/08/92	ISPP	Composite	Scheduled	0.00	11,742.000**
	12/09/92	ISPP	Composite	Scheduled	0.00	4,835.000
	12/10/92	ISPP	Composite	Scheduled	0.00	12,960.000**
	12/11/92	ISPP	Composite	Scheduled	0.00	7,648.000
	12/12/92	ISPP	Composite	Scheduled	0.00	23,923.000***
	12/13/92	ISPP	Composite	Scheduled	0.00	12,974.000**
	12/14/92	ISPP	Composite	Scheduled	0.00	11,895.000**
	12/15/92	ISPP	Composite	Scheduled	0.00	15,895.000***
	12/16/92	ISPP	Composite	Scheduled	0.00	29,416.000***
	12/17/92	ISPP	Composite	Scheduled	0.00	17,705.000***
	12/18/92	ISPP	Composite	Scheduled	0.00	24,041.000***
	12/19/92	ISPP	Composite	Scheduled	0.00	45,430.000***
*	12/20/92	ISPP	Composite	Scheduled	0.00	27,024.000***
	12/21/92	ISPP	Composite	Scheduled	0.00	51,364.000***
*	12/22/92	ISPP	Composite	Scheduled	0.00	56,189.000***
	12/23/92	ISPP	Composite	Scheduled	0.00	43,036.000***
	12/24/92	ISPP	Composite	Scheduled	0.00	2,170.000
	12/25/92	ISPP	Composite	Scheduled → down day	0.00 →	27,245.000***
set up *	12/26/92	ISPP	Composite	Scheduled	0.00	27,245.000***
	12/27/92	ISPP	Composite	Scheduled	0.00	11,365.000**
*	12/28/92	ISPP	Composite	Scheduled	0.00	13,522.000**
	12/29/92	ISPP	Composite	Scheduled	0.00	9,503.000
*	12/30/92	ISPP	Composite	Scheduled	0.00	7,590.000
	12/31/92	ISPP	Composite	Scheduled	0.00	6,762.000
			Monthly Average (12/01/92 - 12/31/92)			18,615.129***

17,790#

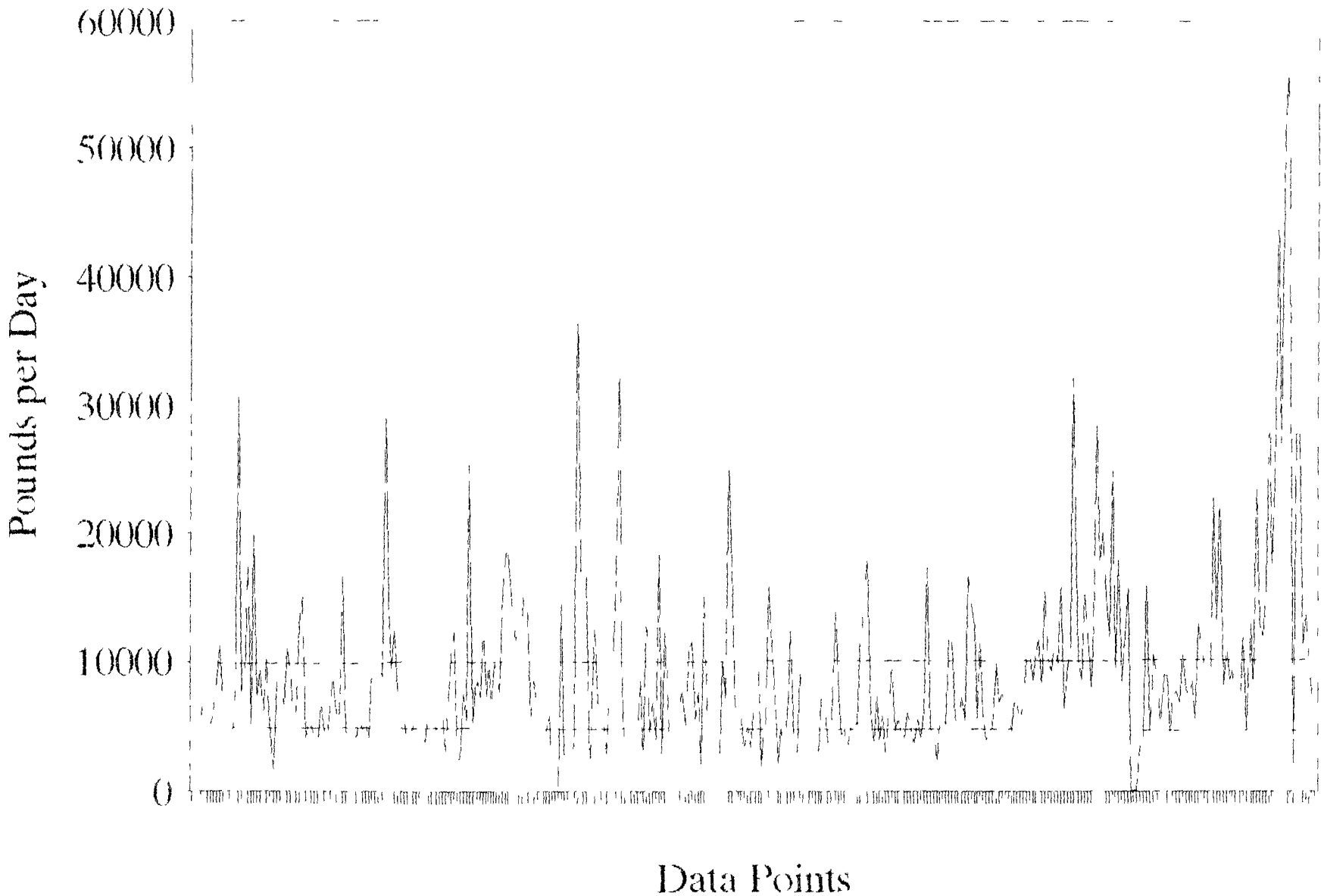
Parameter: pH Limits (Min/Max/Avg: (5.500)9.500/8.500

Date	Lab	Collect Method	Sample Type	Flow	Result
12/01/92	ISPP	Composite	Scheduled	0.00	7.700
12/02/92	ISPP	Composite	Scheduled	0.00	7.900
12/03/92	ISPP	Composite	Scheduled	0.00	7.700

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

Michigan Paperboard Company

01/01/92 -- 12/31/92



CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

March 8, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

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If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

[illegible]

[illegible] Industrial Pollution Report

Ø2/Ø1/93 Thru Ø2/28/93

ID #: 193 Michigan Paperboard Corp.
Site #: 1 Spacing Mill Sample Station

Parameter	Limits (Min/Max/Avg)	Date	#	Result
BOD5	Monthly Average (Ø2/Ø1/93 - Ø2/28/93)			4,Ø9[illegible].14**
TSS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/Ø3/93	1	Ø,[illegible]11.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/Ø4/93	1	1[illegible],362.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/Ø9/93	1	1Ø,[illegible]ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/1Ø/93	1	[illegible],33[illegible]ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/14/93	1	1Ø,[illegible]4[illegible]ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/18/93	1	1Ø,1[illegible].ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/19/93	1	1Ø,18[illegible]ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø2/23/93	1	11,[illegible]8[illegible].ØØØ**
	Monthly Average (Ø2/Ø1/93 - Ø2/28/93)			7,7[illegible]8.[illegible]ØØ***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TSS Limit
All results reported in units established by Discharge Authorization

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

February 24, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1Ø42.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($1Ø,ØØØ) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1Ø42 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

01/01/93 Thru 01/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	Monthly Average (01/01/93 - 01/31/93)			3,877.419**
TSS	10,000.000/5,000.000	01/02/93	1	10,068.000**
	10,000.000/5,000.000	01/04/93	1	13,797.000**
	10,000.000/5,000.000	01/09/93	1	13,107.000**
	10,000.000/5,000.000	01/10/93	1	25,309.000***
	10,000.000/5,000.000	01/13/93	1	13,675.000**
	10,000.000/5,000.000	01/14/93	1	13,732.000**
	10,000.000/5,000.000	01/15/93	1	11,044.000**
	10,000.000/5,000.000	01/17/93	1	10,420.000**
	10,000.000/5,000.000	01/18/93	1	10,330.000**
	10,000.000/5,000.000	01/19/93	1	13,644.000**
	10,000.000/5,000.000	01/20/93	1	13,992.000**
	10,000.000/5,000.000	01/24/93	1	16,923.000***
	10,000.000/5,000.000	01/25/93	1	13,055.000**
	10,000.000/5,000.000	01/26/93	1	11,239.000**
	10,000.000/5,000.000	01/29/93	1	11,709.000**
	10,000.000/5,000.000	01/30/93	1	14,886.000***
	Monthly Average (01/01/93 - 01/31/93)			10,360.161***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

April 12, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø3/Ø1/93 Thru Ø3/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
OD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/14/93	1	6,552.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/2Ø/93	1	6,582.ØØØ**
	Monthly Average (Ø3/Ø1/93 - Ø3/31/93)			4,471.419**
'SS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø3/Ø7/93	1	1Ø,ØØ4.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø3/21/93	1	1Ø,138.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø3/23/93	1	13,125.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø3/3Ø/93	1	11,236.ØØØ**
	Monthly Average (Ø3/Ø1/93 - Ø3/31/93)			6,97Ø.9Ø3**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

May 17,1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø4/Ø1/93 Thru Ø4/3Ø/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
OD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/14/93	1	7,466.ØØØ**
	Monthly Average (Ø4/Ø1/93 - Ø4/3Ø/93)			4,452.233**
SS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/Ø2/93	1	13,251.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/Ø8/93	1	13,7Ø2.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/13/93	1	12,662.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/14/93	1	11,199.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/16/93	1	13,Ø57.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/19/93	1	11,3Ø9.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/2Ø/93	1	11,522.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/22/93	1	29,647.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/24/93	1	12,Ø4Ø.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/25/93	1	1Ø,214.ØØØ**
	Monthly Average (Ø4/Ø1/93 - Ø4/3Ø/93)			9,2Ø6.4ØØ***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
ll results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

June 17,1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

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If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø5/Ø1/93 Thru Ø5/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø5/Ø4/93	1	8,384.ØØØ**
	Monthly Average (Ø5/Ø1/93 - Ø5/31/93)			4,3Ø2.161**
TSS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/Ø2/93	1	1Ø,Ø33.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/Ø3/93	1	1Ø,355.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/Ø4/93	1	17,426.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/Ø9/93	1	1Ø,399.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/1Ø/93	1	15,732.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/11/93	1	11,757.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/16/93	1	12,872.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/19/93	1	12,313.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/27/93	1	12,573.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/28/93	1	1Ø,518.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/3Ø/93	1	14,585.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/31/93	1	22,836.ØØØ***
	Monthly Average (Ø5/Ø1/93 - Ø5/31/93)			8,992.452***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

July 8, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

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If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

06/01/93 Thru 06/30/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	Monthly Average (06/01/93 - 06/30/93)			4,476.433**
TSS	10,000.000/5,000.000	06/10/93	1	17,615.000***
	10,000.000/5,000.000	06/11/93	1	15,641.000***
	10,000.000/5,000.000	06/16/93	1	14,453.000***
	10,000.000/5,000.000	06/17/93	1	10,043.000**
	10,000.000/5,000.000	06/19/93	1	18,871.000***
	Monthly Average (06/01/93 - 06/30/93)			7,177.433***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

August 16, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate to contact me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø7/Ø1/93 Thru Ø7/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø7/1Ø/93	1	6,777.ØØØ**
	Monthly Average (Ø7/Ø1/93 - Ø7/31/93)			4,22Ø.387**
TSS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/Ø6/93	1	17,136.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/Ø8/93	1	11,813.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/Ø9/93	1	23,977.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/1Ø/93	1	18,424.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/11/93	1	16,Ø56.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/12/93	1	11,239.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø7/29/93	1	12,192.ØØØ**
	Monthly Average (Ø7/Ø1/93 - Ø7/31/93)			7,649.Ø32***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

September 16, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø8/Ø1/93 Thru Ø8/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	Monthly Average (Ø8/Ø1/93 - Ø8/31/93)			4,321.935**
TSS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/Ø1/93	1	11,975.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/Ø9/93	1	12,957.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/19/93	1	25,257.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/2Ø/93	1	11,781.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/22/93	1	18,27Ø.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/23/93	1	18,8Ø6.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø8/26/93	1	11,161.ØØØ**
	Monthly Average (Ø8/Ø1/93 - Ø8/31/93)			8,3Ø9.548***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

October 26, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats, Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

cc. file

09/01/93 Thru 09/30/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,500.000/3,250.000	09/06/93	1	6,834.000**
	6,500.000/3,250.000	09/13/93	1	7,725.000**
	6,500.000/3,250.000	09/22/93	1	7,330.000**
	Monthly Average (09/01/93 - 09/30/93)			5,192.100***
TSS	10,000.000/5,000.000	09/03/93	1	12,881.000**
	10,000.000/5,000.000	09/06/93	1	15,491.000***
	10,000.000/5,000.000	09/08/93	1	10,769.000**
	10,000.000/5,000.000	09/10/93	1	11,672.000**
	10,000.000/5,000.000	09/11/93	1	11,015.000**
	10,000.000/5,000.000	09/12/93	1	14,467.000***
	10,000.000/5,000.000	09/13/93	1	16,132.000***
	10,000.000/5,000.000	09/14/93	1	15,820.000***
	10,000.000/5,000.000	09/16/93	1	10,355.000**
	10,000.000/5,000.000	09/24/93	1	12,715.000**
	10,000.000/5,000.000	09/26/93	1	13,911.000**
	10,000.000/5,000.000	09/27/93	1	22,027.000***
	10,000.000/5,000.000	09/28/93	1	21,656.000***
	Monthly Average (09/01/93 - 09/30/93)			10,145.600***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

November 10, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

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through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

10/01/93 Thru 10/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,500.000/3,250.000	10/03/93	1	7,591.000**
	6,500.000/3,250.000	10/05/93	1	6,633.000**
	6,500.000/3,250.000	10/06/93	1	12,373.000***
	6,500.000/3,250.000	10/07/93	1	6,701.000**
	6,500.000/3,250.000	10/11/93	1	8,968.000**
	6,500.000/3,250.000	10/12/93	1	6,926.000**
	6,500.000/3,250.000	10/13/93	1	7,731.000**
	6,500.000/3,250.000	10/14/93	1	6,712.000**
	6,500.000/3,250.000	10/16/93	1	7,334.000**
	6,500.000/3,250.000	10/17/93	1	6,770.000**
	6,500.000/3,250.000	10/18/93	1	7,201.000**
	6,500.000/3,250.000	10/19/93	1	7,684.000**
	6,500.000/3,250.000	10/20/93	1	7,500.000**
	6,500.000/3,250.000	10/21/93	1	9,157.000***
	6,500.000/3,250.000	10/24/93	1	7,127.000**
	6,500.000/3,250.000	10/25/93	1	7,220.000**
	6,500.000/3,250.000	10/26/93	1	7,322.000**
	6,500.000/3,250.000	10/27/93	1	7,059.000**
	6,500.000/3,250.000	10/29/93	1	6,910.000**
	6,500.000/3,250.000	10/30/93	1	8,406.000**
	6,500.000/3,250.000	10/31/93	1	6,628.000**
	Monthly Average (10/01/93 - 10/31/93)			6,999.290***
TSS	10,000.000/5,000.000	10/01/93	1	10,206.000**
	10,000.000/5,000.000	10/02/93	1	15,324.000***
	10,000.000/5,000.000	10/03/93	1	10,643.000**
	10,000.000/5,000.000	10/06/93	1	15,387.000***
	10,000.000/5,000.000	10/07/93	1	14,808.000***
	10,000.000/5,000.000	10/11/93	1	17,168.000***
	10,000.000/5,000.000	10/13/93	1	10,749.000**
	10,000.000/5,000.000	10/14/93	1	13,116.000**
	10,000.000/5,000.000	10/21/93	1	15,156.000***
	10,000.000/5,000.000	10/23/93	1	12,478.000**
	10,000.000/5,000.000	10/24/93	1	12,728.000**
	10,000.000/5,000.000	10/25/93	1	11,689.000**
	10,000.000/5,000.000	10/29/93	1	11,675.000**
	10,000.000/5,000.000	10/30/93	1	13,707.000**
	10,000.000/5,000.000	10/31/93	1	11,899.000**
	Monthly Average (10/01/93 - 10/31/93)			9,839.581***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

December 9, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats, Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

11/01/93 Thru 11/30/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,500.000/3,250.000	11/02/93	1	8,451.000**
	6,500.000/3,250.000	11/03/93	1	12,311.000***
	6,500.000/3,250.000	11/04/93	1	7,154.000**
	6,500.000/3,250.000	11/10/93	1	8,676.000**
	6,500.000/3,250.000	11/11/93	1	7,234.000**
	6,500.000/3,250.000	11/13/93	1	7,137.000**
	6,500.000/3,250.000	11/21/93	1	7,162.000**
	6,500.000/3,250.000	11/22/93	1	7,076.000**
	Monthly Average (11/01/93 - 11/30/93)			6,378.867***
TSS	10,000.000/5,000.000	11/02/93	1	13,172.000**
	10,000.000/5,000.000	11/03/93	1	25,595.000***
	10,000.000/5,000.000	11/04/93	1	13,385.000**
	10,000.000/5,000.000	11/10/93	1	18,198.000***
	10,000.000/5,000.000	11/11/93	1	13,535.000**
	10,000.000/5,000.000	11/12/93	1	11,921.000**
	10,000.000/5,000.000	11/13/93	1	17,525.000***
	10,000.000/5,000.000	11/25/93	1	11,563.000**
	Monthly Average (11/01/93 - 11/30/93)			8,697.367***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

January 10, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

12/01/93 Thru 12/31/93

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,500.000/3,250.000	12/01/93	1	6,662.000**
	6,500.000/3,250.000	12/08/93	1	7,176.000**
	6,500.000/3,250.000	12/10/93	1	6,612.000**
	6,500.000/3,250.000	12/18/93	1	7,739.000**
	6,500.000/3,250.000	12/19/93	1	8,279.000**
	6,500.000/3,250.000	12/20/93	1	8,161.000**
	6,500.000/3,250.000	12/21/93	1	8,232.000**
	6,500.000/3,250.000	12/28/93	1	7,025.000**
	6,500.000/3,250.000	12/30/93	1	8,896.000**
	Monthly Average (12/01/93 - 12/31/93)			5,756.258***
TSS	10,000.000/5,000.000	12/03/93	1	10,303.000**
	10,000.000/5,000.000	12/07/93	1	12,701.000**
	10,000.000/5,000.000	12/08/93	1	15,206.000***
	10,000.000/5,000.000	12/18/93	1	12,204.000**
	10,000.000/5,000.000	12/19/93	1	11,582.000**
	10,000.000/5,000.000	12/20/93	1	21,284.000***
	10,000.000/5,000.000	12/21/93	1	10,234.000**
	10,000.000/5,000.000	12/22/93	1	11,454.000**
	10,000.000/5,000.000	12/23/93	1	16,335.000***
	10,000.000/5,000.000	12/26/93	1	12,453.000**
	10,000.000/5,000.000	12/27/93	1	13,433.000**
	10,000.000/5,000.000	12/28/93	1	11,162.000**
	Monthly Average (12/01/93 - 12/31/93)			8,608.677***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

February 10, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø1/Ø1/94 Thru Ø1/31/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/Ø3/94	1	11,Ø72.ØØØ***
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/Ø5/94	1	7,52Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/Ø6/94	1	6,988.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/Ø7/94	1	11,277.ØØØ***
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/Ø8/94	1	6,933.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/1Ø/94	1	7,675.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/11/94	1	6,897.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/12/94	1	6,922.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/13/94	1	6,829.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/14/94	1	8,74Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/15/94	1	7,46Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/16/94	1	7,276.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/17/94	1	6,678.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/18/94	1	6,675.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/23/94	1	7,556.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/27/94	1	7,933.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/28/94	1	7,832.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/29/94	1	7,789.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø1/31/94	1	6,91Ø.ØØØ**
	Monthly Average (Ø1/Ø1/94 - Ø1/31/94)			6,789.323**
TSS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/Ø3/94	1	1Ø,149.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/Ø4/94	1	12,994.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/Ø5/94	1	23,313.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/Ø6/94	1	14,Ø46.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/Ø7/94	1	29,646.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/1Ø/94	1	14,497.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/14/94	1	15,295.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/15/94	1	1Ø,941.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/16/94	1	22,7Ø9.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/17/94	1	27,1Ø4.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/18/94	1	11,425.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø1/19/94	1	16,822.ØØØ**
	Monthly Average (Ø1/Ø1/94 - Ø1/31/94)			9,891.452**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Kenneth H. Tsuchiyama, Director

Gregory N. Zanotti, P.E., City Engineer

Linda L. Ross-Sides, Deputy Director/Operations

February 22, 1994

John Goll
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek MI 49017

Dear Mr. Goll,

Please find enclosed Invoice Number 69682 in the amount of $2,288.05.

Due to excessive discharges during the month of January, specifically January 16 and 17, the City of Battle Creek lost pumping capabilities out of the I&E building. The amount of paper waste created sufficiently high pressure, causing the expansion valves on each pump to burst, flooding the I&E building with 4 ft. of sewage. $1,288.05 is your share of the cost for the clean-up and repair of this building.

Also as part of this invoice, is a $1,000 penalty for violation of your monthly discharge limit of January 1994.

I hope this information is sufficient for your needs. Should you need a more detailed breakdown, do not hesitate to contact this office.

Sincerely,

JOHN F. O'BRIEN, P.E.
Public Utilities Manager
Public Works Department

Encl

cc: K. Tsuchiyama, Public Works Director
W. Thompson, WWTP Superintendent
M. Andrews, Industrial & Sludge Analyst

cf

Director (616) 966-3343

City Engineer	(616) 966-3343	Public Service Division	(616) 966-3507
Deputy Director	(616) 966-3479	Wastewater Division	(616) 966-3513
Engineering Division	(616) 966-3343	Water Division	(616) 966-3496

P.O. Box 1717, Battle Creek, Michigan 49016

INVOICE
CITY OF BATTLE CREEK

CITY HALL, 103 E. MICHIGAN AVE.
P. O. BOX 1717
BATTLE CREEK, MICHIGAN 49016

NO. 0069682

DATE 2/17/94

MICHIGAN PAPERBOARD CORP. 1784
79 E FOUNTAIN ST

BATTLE CREEK MI 49017 2,288.05

PLEASE RETURN TOP PORTION WITH REMITTANCE

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	REPAIR AND CLEAN UP OF INFLUENT AND EFFLUENT BUILDING DAMAGE CAUSED BY DISCHARGE OF PAPER WASTES IN EXCESS OF PERMIT		1,288.05
	DISCHARGE LIMIT VIOLATION - MONTHLY DISCHARGE AVERAGE OF SS - JANUARY 1994		1,000.00
	PAYMENT IS DUE 30 DAYS FROM INVOICE DATE		
		TOTAL	2,288.05

DISTRIBUTION

FUND	ACTIVITY	ACCOUNT	PROJECT	Sub-project	AMOUNT
590	000	670-000	00000	0000	2,288.05
			TOTAL		2,288.05

PLEASE SEND REMITTANCE TO:
CITY TREASURER
P.O. BOX 1717
BATTLE CREEK, MI 49016

NO. 0069682
DATE: 2/17/94

FOR INFORMATION REGARDING THIS INVOICE, PLEASE CONTACT:

OPERATIONS
616-966-3513

A FEE OF 1.5 PERCENT PER MONTH (ANNUAL RATE OF 18.0 PERCENT) WILL BE APPLIED ON BALANCE OF INVOICE REMAINING UNPAID ON THE LAST DAY OF EVERY MONTH.

WHITE - Original BLUE - Treasurer/ Income Tax PINK - Department YELLOW - Finance GREEN - Treasurer/Miscellaneous

CITY OF BATTLE CREEK
INTEROFFICE MEMORANDUM

February 2, 1994

TO: John F. O'Brien, Public Utilities Manager

FROM: Walter L. Thompson, Wastewater Division Superintendent WLT

RE: OPERATING EXPENSE REPORT - I & E BUILDING CLEAN UP

Please find attached a list of expenses incurred as a result of the unusually heavy paper solids loadings during the first three weeks of January 1994. The increase of paper solids resulted in higher raw sludge viscosity, elevated higher pump discharge head pressures, and finally damage to the number six raw sludge pump. The list of personnel expenses includes mechanical repair of the number six raw sludge pump, clean up and removal of approximately 12,000 gallons of raw sludge from the Sludge Pump Building which flooded when a sludge pump air chamber burst under the excessive operating pressures.

If you desire any additional information on this matter, please contact me.

/ac

Attachment

cc: File
npc
Walder F
M. Andrews

no outside charge number issued per W.L. Thompson 2-3-93

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 3
To John F. O'Brien	From Walt Thompson
Co. City of Battle Creek	Co. City of Battle Creek
Dept. Public Utilities	Phone # 966 3513
Fax # 966-3482	Fax # 965 3290

CITY OF BATTLE CREEK
DEPARTMENT OF PUBLIC WORKS - WASTEWATER DIVISION
I & E BUILDING CLEAN UP

EMPLOYEE NUMBER	EMPLOYEE NAME	HOURS	RATE	AMOUNT
(706-555)	REGULAR			
3530	Park (Dewatering & Cleanup)	0.7	13.10	$ 9.17
6596	Olivarri (Dewatering & Cleanup)	1.0	13.35	13.35
6745	Barr (Supervision)	5.0	16.19	80.95
3323	Colen (Dewatering & Cleanup)	5.0	12.71	63.55
(709-555)	OVERTIME			
6596	Olivarri (Dewatering & Cleanup)	6.0	20.03	120.18
6601	Rampanelli (Dewatering & Cleanup)	6.0	19.83	118.98
6972	Postula (Dewatering & Cleanup)	6.5	19.83	128.90
5246	Verpooten (Supervision)	1.0	24.44	24.44
5249	Pond (Supervision)	5.0	24.44	122.20
(706-564)	REGULAR			
6483	Monck (Mechanical Repair)	8.0	13.17	105.36
5877	Donathan (Mechanical Repair)	8.0	12.71	101.68
5657	Duncan (Mechanical Repair)	16.0	13.17	210.72
5251	Sweetin (Mechanical Repair)	6.0	12.71	76.26
4494	Liebherr (Mechanical Repair)	6.0	12.71	76.26
4394	Putt (Supervision)	1.5	16.58	24.87
4638	Schultz (Supervision)	1.0	16.04	16.04
(709-564)	OVERTIME			
6483	Monck (Mechanical Repair)	4.0	19.76	79.04
5877	Donathan (Mechanical Repair)	4.0	19.07	76.28
			Subtotal	$1,448.23
			Overhead 47.75%	691.53
			TOTAL	$2,139.76

CITY OF BATTLE CREEK
DEPARTMENT OF PUBLIC WORKS - WASTEWATER DIVISION
I & E BUILDING CLEAN UP
PAGE TWO

(1) Sludge Pump Air Chamber		$ 317.00
(8) Belts @ $8.87 each		70.96
(2) Gals Mobil Gear #629 Oil @ $4.31/Gal		8.72
	Subtotal	$ 396.68
	Overhead 10%	39.67
	TOTAL	$ 436.35

Total Expenses:	$ 2,139.76
	436.35
	$ 2,576.11

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

March 7, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats, Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø2/Ø1/94 Thru Ø2/28/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø2/94	1	7 727.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø4/94	1	7,197.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø5/94	1	7,392.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø6/94	1	6,646.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø7/94	1	6,784.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/Ø8/94	1	8,512.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/14/94	1	7,968.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/19/94	1	7,285.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/21/94	1	6,886.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø2/27/94	1	6,751.ØØØ**
	Monthly Average (Ø2/Ø1/94 - Ø2/28/94)			6,Ø16.786***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 12, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø3/Ø1/94 Thru Ø3/31/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
OD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/Ø3/94	1	6,791.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/Ø4/94	1	6,586.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/Ø6/94	1	8,753.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/1Ø/94	1	6,926.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/11/94	1	6,61Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/13/94	1	6,616.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/14/94	1	6,585.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/16/94	1	7,152.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/17/94	1	7,549.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/19/94	1	6,869.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/2Ø/94	1	6,9Ø1.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/21/94	1	8,ØØØ.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø3/28/94	1	7,294.ØØØ**
	Monthly Average (Ø3/Ø1/94 - Ø3/31/94)			6,265.613***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Wastewater Division

April 29, 1993

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: Industrial User Discharge Authorization

In May, 1988 your facility received a Discharge Authorization outlining your responsibilities under the City of Battle Creek's Industrial Pretreatment Program. This authorization was developed to give each local industry a single working document, specifically designed for each industrial facility.

This Discharge Authorization references several portions of the City's Sewer Use Ordinance, Section 1042 of the Codified Ordinances of the City of Battle Creek. The City of Battle Creek is currently working with the Michigan Department of Natural Resources to upgrade or amend our current Sewer Use Ordinance. These changes are being implemented to address new regulations which have been promulgated by the Environmental Protection Agency. The City is expecting to have these changes approved by the MDNR shortly.

Your facility's Discharge Authorization expires on April 30, 1993. To alleviate the need to update a new Discharge Authorization shortly after it had been reissued, the City of Battle Creek is extending the expiration date on your existing Discharge Authorization until June 30, 1993.

If you have any questions, please do not hesitate to

2000 West River Road, Battle Creek, MI 49015-1181 (616) 966-3513

contact me at 616-966-3513 or written questions may be submitted to:

City of Battle Creek
ATTN: Industrial Surveillance
2000 W. River Road
Battle Creek, Michigan 49015-1181

Thank you for your continued cooperation with the City of Battle Creek's Industrial Pretreatment Program.

Sincerely,

Michael G Andrews
Pretreatment Coordinator

cc. file

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

May 13, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49Ø17-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1Ø42.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($1Ø,ØØØ) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1Ø42 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø4/Ø1/94 Thru Ø4/3Ø/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
OD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/Ø1/94	1	6,942.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/Ø4/94	1	7,5Ø9.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/12/94	1	6,839.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/14/94	1	6,797.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/15/94	1	9,Ø71.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/2Ø/94	1	6,655.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/21/94	1	7,576.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/22/94	1	7,665.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/23/94	1	7,Ø8Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø4/25/94	1	6,511.ØØØ**
	Monthly Average (Ø4/Ø1/94 - Ø4/3Ø/94)			5,4Ø3.967***
SS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/Ø5/94	1	11,847.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/21/94	1	2Ø,677.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/22/94	1	21,37Ø.ØØØ***
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø4/23/94	1	73,882.ØØØ***
	Monthly Average (Ø4/Ø1/94 - Ø4/3Ø/94)			7,727.Ø67***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

June 13, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

If you have any questions, do not hesitate contacting me.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø5/Ø1/94 Thru Ø5/31/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
OD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø5/12/94	1	6,776.ØØØ**
	Monthly Average (Ø5/Ø1/94 - Ø5/31/94)			3,941.355**
SS	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/15/94	1	11,113.ØØØ**
	1Ø,ØØØ.ØØØ/5,ØØØ.ØØØ	Ø5/22/94	1	17,Ø39.ØØØ***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

June 14, 1995

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

Enclosure

cc. file

05/01/95 Thru 05/31/95

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
SS	20,000.000/10,000.000	05/14/95	1	30,486.000***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
ll results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

July 14, 1994

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

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If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

cc. file

Ø6/Ø1/94 Thru Ø6/3Ø/94

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
BOD5	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø6/Ø8/94	1	7,17Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø6/Ø9/94	1	7,28Ø.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø6/17/94	1	7,874.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø6/21/94	1	7,457.ØØØ**
	6,5ØØ.ØØØ/3,25Ø.ØØØ	Ø6/28/94	1	7,837.ØØØ**
	Monthly Average (Ø6/Ø1/94 - Ø6/3Ø/94)			5,236.9ØØ***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

October 10, 1995

Mr. Jim Hosking
Michigan Paperboard Corporation
79 E. Fountain St.
Battle Creek, Michigan 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section 1042.99 of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.

Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats, Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance, the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Pretreatment Coordinator

Enclosure

cc. file

09/01/95 Thru 09/30/95

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
SS	20,000.000/10,000.000	09/07/95	1	25,264.000**

* Violation of Minimum Limit
** Violation of Maximum Limit
(** Violation of TRC Limit
ll results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 10, 1996

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Mr. Hosking:

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Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

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Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

Enclosure

cc: file

03/01/96 Thru 03/31/96

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station

ameter	Limits (Min)Max/Avg	Date	S#	Results
S	20,000.000/10,000.000	03/20/96	1	23,482.000**
	20,000.000/10,000.000	03/21/96	1	31,533.000***
	20,000.000/10,000.000	03/22/96	1	20,005.000**

* Violation of Minimum Limit
** Violation of Maximum Limit
** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

June 13, 1996

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Mr. Hosking:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Pretreatment Coordinator

Enclosure

cc: file

05/01/96 Thru 05/31/96

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

arameter	Limits (Min)Max/Avg	Date	S#	Results
SS	20,000.000/10,000.000	05/19/96	1	43,018.000***

Shut down day.

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

xc: John Goll
Ron Fox
Mike Scholly

January 13, 1997

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

12/01/96 Thru 12/31/96

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
TSS	20,000.000/10,000.000	12/22/96	1	21,741.000**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

xc: John Goll
Ron Fox
Mike Scholly

January 13, 1997

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

12/01/96 Thru 12/31/96

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
TSS	20,000.000/10,000.000	12/22/96	1	21,741.000**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

October 10, 1997

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Industrial Violations Report

09/01/97 Thru 09/30/97

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station

Parameter	Limits (Min)Max/Avg	Date	S#	Results
TSS	20,000.000/10,000.000	09/09/97	1	30,553.000**

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of IPC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 16, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

03/01/98 Thru 03/31/98

IU #: 159 - Michigan Paperboard Corp.
Site #: 1 - Loading dock sample station.

Parameter	Limits (Min)Max/Avg	Date	S#	Results
TSS	20,000.000/10,000.000	03/09/98	1	31,200.000***
	20,000.000/10,000.000	03/10/98	1	50,339.000***

* Violation of Minimum Limit
** Violation of Maximum Limit
*** Violation of TRC Limit
All results reported in units established by Discharge Authorization.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

May 13, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Violation Results Report

Date Range: 04/01/98 to 04/30/98
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

Sampling Date	Lab Name	Collection Method	Sample Type	Calculated Results *	# Samples	Violations Min	Violations Max	Violations Max TRC
04/21/1998	BCISPP	Composite	Scheduled	27,326.000 mg/L	1		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

August 24, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Violation Results Report

Date Range: 07/01/98 to 07/31/98
IU: 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter: TSS - TSS

Daily Limits - Min: 0.000 Max: 20,000.000 / Max TRC: 28,000.000

--- Sampling ---						--- Daily Limit Violations ---		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
07/06/1998	001	BCISPP	Composite	Scheduled	22,662.000		X	
07/27/1998	001	BCISPP	Composite	Scheduled	49,524.000		X	X

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

September 14, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Violations Results Report

Date Range: 08/01/98 to 08/31/98
IU: 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter: TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Max TRC: 28,000.000

--- Sampling ---						--- Daily Limit Violations ---		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
08/08/1998	001	BCISPP	Composite	Scheduled	30,597.000 lb/Day		X	X
08/18/1998	001	BCISPP	Composite	Scheduled	23,963.000 lb/Day		X	

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

October 14, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATION RESULTS REPORT

Date Range: 09/01/98 to 09/30/98
IU: 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter: TSS - TSS Daily Limits - Min: 0.000 Max. 20,000.000 / Max TRC: 28,000.000

--- Sampling ---						--- Daily Limit Violations ---		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
09/20/1998	001	BCISPP	Composite	Scheduled	20,550.000 mg/L		X	

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

December 21, 1998

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
>
> Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.
>
> Any other violation of a pretreatment effluent limit that the City determines has caused, alone

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Violations Report

Date Range: 11/01/98 to 11/30/98
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000 000 / Max TRC: 28,000 000 / Avg Max TRC: 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
11/14/1998	001	BCISPP	Composite	Scheduled	20,193.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

January 8, 1999

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 12/01/98 to 12/31/98
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : BOD5 - BOD5 Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
12/08/1998	001	BCISPP	Composite	Scheduled	22,582.000 mg/L		X	

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
12/03/1998	001	BCISPP	Composite	Scheduled	20,994.000 mg/L		X	
12/07/1998	001	BCISPP	Composite	Scheduled	22,842.000 mg/L		X	
12/08/1998	001	BCISPP	Composite	Scheduled	59,859.000 mg/L		X	X
12/23/1998	001	BCISPP	Composite	Scheduled	43,227.000 mg/L		X	X

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 14, 1999

Mr. James Hosking
Michigan Paperboard Corp.
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

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2000 West River Road, Battle Creek, Michigan 49015-1181
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Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 03/01/99 to 03/31/99
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min. 0.000 Max· 20,000 000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	Max TRC
03/03/1999	001	BCISPP	Composite	Scheduled	37,651.000 mg/L		X	X

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

June 15, 1999

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

DISCHARGE VIOLATIONS REPORT

Date Range: 05/01/1999 to 05/31/1999
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS

Daily Limits - Min: 0.0000 Max: 20,000.0000 / Min Avg: 0.0000 Max Avg: 10,000.0000 / Max TRC: 28,000.0000 / Avg Max TRC: 14,000.0000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
05/02/1999	001	BCISPP	Composite	Scheduled	24,658.0000 mg/L		X	
05/09/1999	001	BCISPP	Composite	Scheduled	27,464.0000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

July 13, 1999

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: VIOLATION REPORT

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

DISCHARGE MONITORING VIOLATIONS REPORT

Date Range: 06/01/1999 to 06/30/1999
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS

Daily Limits - Min: 0.0000 Max: 20,000.0000 / Min Avg: 0.0000 Max Avg: 10,000.0000 / Max TRC: 28,000.0000 / Avg Max TRC: 14,000.0000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
06/19/1999	001	BCISPP	Composite	Scheduled	20,556.0000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

October 6, 1999

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 09/01/1999 to 09/30/1999
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS

Daily Limits - Min: 0.0000 Max: 20,000.0000 / Min Avg: 0.0000 Max Avg: 10,000.0000 / Max TRC: 28,000.0000 / Avg Max TRC: 14,000.0000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
09/28/1999	001	BCISPP	Composite	Scheduled	22,471.0000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

January 14, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 12/01/1999 to 12/31/1999
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS

Daily Limits - Min· 0.0000 Max: 20,000 0000 / Min Avg: 0.0000 Max Avg: 10,000.0000 / Max TRC: 28,000.0000 / Avg Max TRC· 14,000.0000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
12/08/1999	001	BCISPP	Composite	Scheduled	23,196.0000 mg/L		X	
12/23/1999	001	BCISPP	Composite	Scheduled	23,863.0000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

February 10, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Phone (616) 966-3513
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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 01/01/2000 to 01/31/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min. 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC. 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
01/07/2000	001	BCISPP	Composite	Scheduled	29,057.000 mg/L		X	X
01/08/2000	001	BCISPP	Composite	Scheduled	21,541.000 mg/L		X	
01/18/2000	001	BCISPP	Composite	Scheduled	21,039.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 18, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 03/01/2000 to 03/31/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000 000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC. 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
03/16/2000	001	BCISPP	Composite	Scheduled	28,675.000 mg/L		X	X
03/29/2000	001	BCISPP	Composite	Scheduled	27,791.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

May 16, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

mie

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 04/01/2000 to 04/30/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
04/06/2000	001	BCISPP	Composite	Scheduled	22,695.000 mg/L		X	
04/08/2000	001	BCISPP	Composite	Scheduled	22,377.000 mg/L		X	
04/10/2000	001	BCISPP	Composite	Scheduled	24,816.000 mg/L		X	
04/12/2000	001	BCISPP	Composite	Scheduled	20,283.000 mg/L		X	
04/14/2000	001	BCISPP	Composite	Scheduled	41,755.000 mg/L		X	X

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

October 10, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
>
> Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3513
Fax (616) 965-3290

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Mike

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 09/01/2000 to 09/30/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC: 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
09/24/2000	001	BCISPP	Composite	Scheduled	38,381.000		X	X

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

November 15, 2000

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 10/01/2000 to 10/31/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
10/06/2000	001	BCISPP	Composite	Scheduled	28,914 000 mg/L		X	X
10/07/2000	001	BCISPP	Composite	Scheduled	35,379 000 mg/L		X	X

** No Detect results calculated using [Detection Level x 0 50]*

KAR *Laboratories, Inc.*

4425 Manchester Road

Kalamazoo, MI 49001

Phone 616 381-9666

Fax 616 381-9698

November 16, 2000

Mr. Jim Hoskings
Michigan Paperboard
79 East Fountain Street
Battle Creek, MI 49016

Dear Mr. Hoskings:

The staff at KAR Laboratories would like to extend our appreciation for your business in 2000. In order to continue providing you with the best customer service possible, please take a moment to renew your Blanket Purchase Order for 2001. If we could receive a replacement PO# by December 31st it would enable us to continue processing your reports in a quick and timely fashion. If you have any questions regarding this manner contact Mr. Garrett Ervin, Senior Project Manager, at (616)381-9666, and he will be happy to assist you.

Sincerely,
KAR Laboratories, Inc.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

January 12, 2001

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 12/01/2000 to 12/31/2000
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
12/02/2000	001	BCISPP	Composite	Scheduled	31,584 000 mg/L		X	X
12/06/2000	001	BCISPP	Composite	Scheduled	24,091.000 mg/L		X	
12/07/2000	001	BCISPP	Composite	Scheduled	34,442.000 mg/L		X	X
12/23/2000	001	BCISPP	Composite	Scheduled	29,724 000 mg/L		X	X

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

February 9, 2001

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

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Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 01/01/2001 to 01/31/2001
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0 000 Max: 20,000 000 / Min Avg: 0 000 Max Avg· 10,000 000 / Max TRC· 28,000 000 / Avg Max TRC. 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
01/28/2001	001	BCISPP	Composite	Scheduled	25,567.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

March 8, 2001

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 01/30/2001 to 03/01/2001
IU : 159 - Michigan Paperboard Corp
Site: 1 - Loading dock sample station

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
02/16/2001	001	BCISPP	Composite	Scheduled	24,707 000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 16, 2001

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

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I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 03/01/2001 to 03/31/2001
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
03/18/2001	001	BCISPP	Composite	Scheduled	22,474.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

May 14, 2001

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

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I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 04/01/2001 to 04/30/2001
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min: 0.000 Max: 20,000.000 / Min Avg: 0.000 Max Avg: 10,000.000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
04/17/2001	001	BCISPP	Composite	Scheduled	20,903.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0.50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

March 18, 2002

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS MONITORING REPORT

Date Range: 02/01/2002 to 02/28/2002
IU : 159 - Michigan Paperboard Corp.
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : BOD5 - BOD5 Daily Limits - Min: 0 000 Max: 20,000 000 / Min Avg: 0.000 Max Avg 10,000 000 / Max TRC: 28,000.000 / Avg Max TRC: 14,000.000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
02/23/2002	001	BCISPP	Composite	Scheduled	24,401.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

June 25, 2002

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

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>
> Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).
>
> Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

2000 West River Road, Battle Creek, Michigan 49015-1181

Phone (616) 966-3597
Fax (616)965-3290

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

VIOLATIONS REPORT

Date Range: 05/01/2002 to 05/31/2002
IU : 159 - Michigan Carton and Paperboard Company
Site: 1 - Loading dock sample station

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
05/12/2002	001	BCISPP	Composite	Scheduled	25,134 000 mg/L		X	
05/16/2002	001	BCISPP	Composite	Scheduled	27,409 000 mg/L		X	
05/21/2002	001	BCISPP	Composite	Scheduled	20,204 000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

August 20, 2002

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

If subsequent monitoring discovers additional violations, your facility could be considered in significant noncompliance. Significant noncompliance, as it pertains to effluent quality, is defined as:

> Chronic Violations. Sixty-six percent or more of the measurements exceed the same daily maximum limit or the same average limit in a 6-month period.
>
> Technical Review Criteria (TRC) violations. Thirty-three percent or more of the measurements exceed the same daily maximum limit or the same average limit by more than the TRC (TRC = 1.4 for BOD, TSS, Fats Oils & Grease, and 1.2 for all other pollutants except for pH) in a 6-month period.
>
> Any other violation of a pretreatment effluent limit that the City determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).
>
> Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment.

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

If your facility is found to be in significant noncompliance the City of Battle Creek will have to initiate the appropriate enforcement actions.

I hope this information is sufficient for your needs. Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

NON COMPLIANCE (VIOLATIONS) REPORT

Date Range: 07/01/2002 to 07/31/2002
IU : 159 - Michigan Carton and Paperboard Company
Site: 1 - Loading dock sample station.

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD
Permit: 159

Parameter : TSS - TSS Daily Limits - Min 0 000 Max 20,000 000 / Min Avg 0 000 Max Avg 10,000 000 / Max TRC 28,000 000 / Avg Max TRC 14,000 000

--- Sampling ---						---------- Violations ----------		
Date	Number	Lab Name	Collection Method	Sample Type	Results	Min	Max	TRC
07/17/2002	001	BCISPP	Composite	Scheduled	20,504.000 mg/L		X	
07/18/2002	001	BCISPP	Composite	Scheduled	24,448.000 mg/L		X	

** No Detect results calculated using [Detection Level x 0 50]*

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 23, 2003

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

Dear Jim:

RE: NOTICE OF VIOLATION

Enclosed is a copy of a Violation Report generated for your facility using the latest data obtained by the City of Battle Creek's Industrial Monitoring Program. Your facility's wastewater discharge was found in violation of the limits established by your Discharge Authorization. Under Section of the Codified Ordinances of the City of Battle Creek, whoever intentionally or negligently violates any provision of any permit issued shall be civilly liable to the City in a sum not to exceed ten thousand dollars ($10,000) for each day on which such violation occurs. The City may petition the appropriate court of jurisdiction to impose, assess and collect such sums pursuant to Chapter 1042 (Sewers).

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Sincerely,

Michael G. Andrews
Laboratory/IPP Supervisor

Enclosure

cc: file

Violations Monitoring Report

Date Range: 03/01/2003 to 03/31/2003

IU : 159 - Michigan Carton and Paperboard Company

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD

Site: 1 - Loading dock sample station

Permit: 159

Parameter : TSS - TSS

--- Sampling ---						
Date	Number	Collection Method	Sample Type	Comments	Results	Violations
Daily Limits - Concentration: Min: 0.000 Max: 20,000.000 Max TRC: 28,000.000						
03/05/2003	001	Composite	Scheduled		35,259 000 mg/L	>!
03/11/2003	001	Composite	Scheduled		27,563 000 mg/L	>
03/12/2003	001	Composite	Scheduled		32,255 000 mg/L	>!

** No Detect results calculated using [Detection Level x 0 50]*

VIOLATION CODES < = Violates minimum limit > = Violates maximum limit ! = TRC violation

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

April 23, 2003

Mr. James Hosking
Michigan Carton and Paperboard Company
79 E. Fountain Street
Battle Creek, MI 49017-4198

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Sincerely,

Michael G. Andrews
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Enclosure

cc: file

Violations Monitoring Report

Date Range: 03/01/2003 to 03/31/2003

IU : 159 - Michigan Carton and Paperboard Company

Industrial Category: 430 - PULP, PAPER, AND PAPERBOARD

Site: 1 - Loading dock sample station

Permit: 159

Parameter : TSS - TSS

-- Sampling -- Date	Number	Collection Method	Sample Type	Comments	Results	Violations
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03/11/2003	001	Composite	Scheduled		27,563 000 mg/L	>
03/12/2003	001	Composite	Scheduled		32,255 000 mg/L	>!

** No Detect results calculated using [Detection Level x 0 50]*

VIOLATION CODES < = Violates minimum limit > = Violates maximum limit ! = TRC violation

L #

Pollution Incident Prevention Plan (PIPP)
Spill Prevention Control and Countermeasure Plan (SPCC)
Storm Water Pollution Prevention Plan (SWP3)

MICHIGAN PAPERBOARD COMPANY

BATTLE CREEK, MICHIGAN
DELL NO. 950426

DELL ENGINEERING, INC.
Civil Engineering Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263
PH: 616/399-3500 FAX 616/399-3777

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)/ POLLUTION INCIDENT PREVENTION PLAN (PIPP)/ STORM WATER POLLUTION PLAN (SWP3)

FOR

MICHIGAN PAPERBOARD COMPANY
BATTLE CREEK, MICHIGAN

MARCH 1988
DELL NO. 87524

REVISED NOVEMBER 1996
DELL NO. 950426

Prepared By:

Dell Engineering, Inc.
3352 128th Avenue
Holland, MI 49424-0263
Telephone: 616-399-3500
Fascimile: 616-399-3777

KSD/ck CDQ

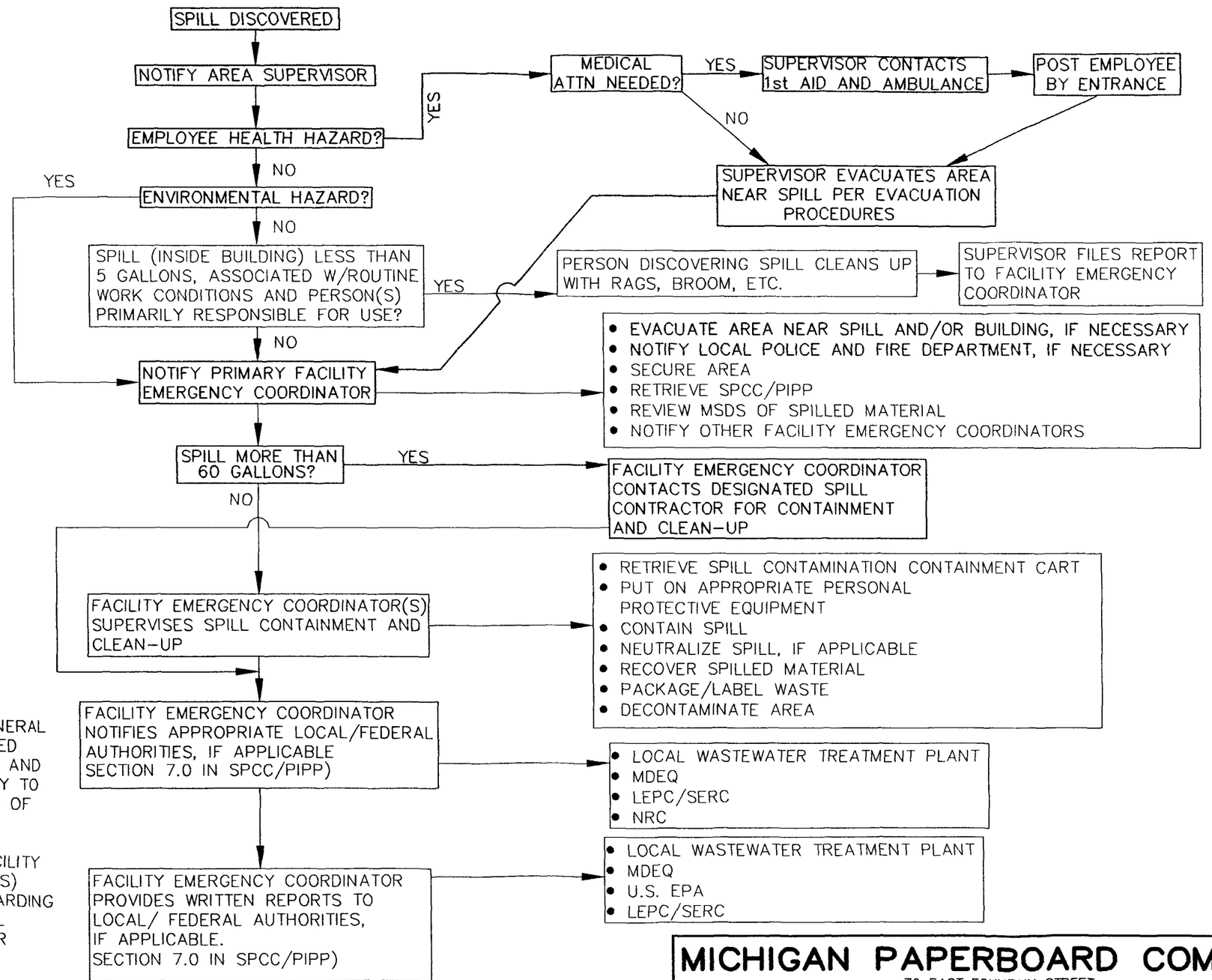
11/96

NOTE: At nights and on weekends, the office number will not be answered. If someone must contact the Michigan Paperboard facility at these times, please use the following numbers:

Mill Office	616-963-4030
Power Plant	616-963-4043
Mill Control Room:	616-963-4263

The emergency coordinators are authorized to commit the necessary resources in the event of an emergency and at least one coordinator is always on-site or can reach the facility on short notice during an emergency. These above individuals also serve as the facility's representatives in charge of spill prevention and control and have prime responsibility for supplementing and complying with this Plan [November 1996].

IN THE EVENT OF A SPILL



NOTE:

THIS CHART PRESENTS GENERAL GUIDELINES TO BE FOLLOWED IN THE EVENT OF A SPILL, AND IS NOT INTENDED TO APPLY TO ALL SITUATIONS OR SPILLS OF ALL TYPES OF CHEMICAL MATERIALS. EMPLOYEES SHOULD CONTACT THE FACILITY EMERGENCY COORDINATOR(S) WITH ANY QUESTIONS REGARDING WORK AREA SPECIFIC SPILL RESPONSE PROCEDURES OR CONCERNS

IN THE EVENT OF A SPILL

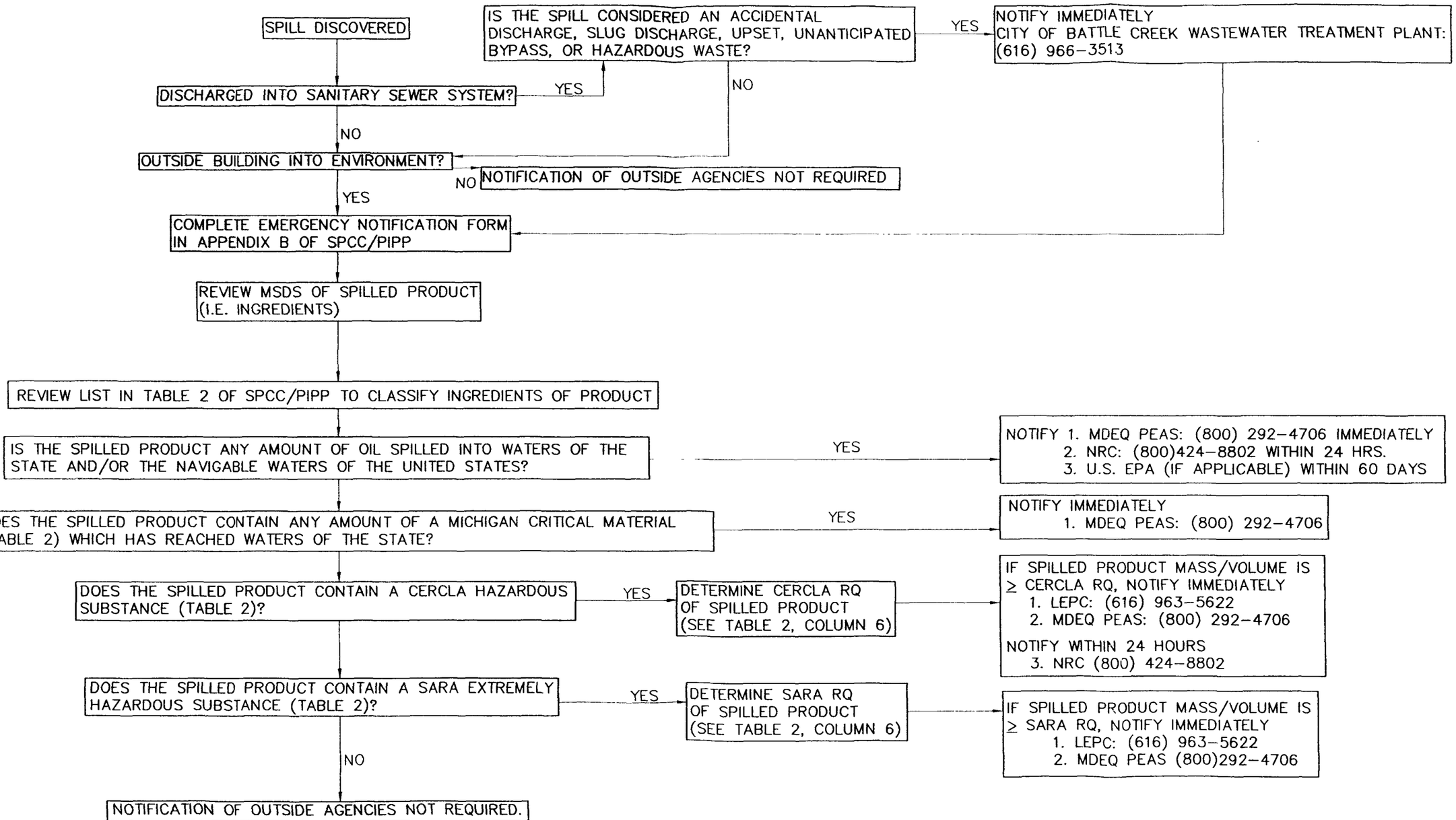
MICHIGAN PAPERBOARD COMPANY
79 EAST FOUNTAIN STREET
BATTLE CREEK, MICHIGAN

950426

DELL ENGINEERING, INC. Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263

<G:950426> 50426W02 6/28/96
REVISIONS ARE TO BE MADE ON THE CADD FILE ONLY

SPILL NOTIFICATION SUMMARY



SPILL NOTIFICATION SUMMARY

MICHIGAN PAPERBOARD COMPANY
79 EAST FOUNTAIN STREET
BATTLE CREEK, MICHIGAN

950426

DELL ENGINEERING, INC. Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263

<G:950426> 50426W03 6/27/96
REVISIONS ARE TO BE MADE ON THE CADD FILE ONLY

EXECUTIVE SUMMARY

Due to the nature of the paperboard operations at Michigan Paperboard Company (MPC) in Battle Creek **[November 1996]**, several materials are required for the operation of the facility and in the manufacturing of a final product. These materials are stored at various locations throughout the facility, and the possibility for a pollution incident to occur does exist. Because of this possibility, the **Michigan Department of Environmental Quality (MDEQ) [November 1996]** requires that a Pollution Incident Prevention Plan (PIPP) be prepared. As MPC has coverage under the General Permit for Storm Water Associated with Industrial Activity, development of a Storm Water Pollution Prevention Plan (SWP3) is required **[November 1996]**. Also, due to the amount of oil stored on site, the United States Environmental Protection Agency (EPA) requires that a Spill Prevention Control and Countermeasure (SPCC) Plan be prepared. This plan will incorporate the requirements of the PIPP, SPCC, and SWP3 into one comprehensive plan **[November 1996]**. The PIPP/SPCC/SWP3 plan shall be placed on file with specific personnel and, at the owner's option, filed with local emergency response officials.

The attached is such a plan for the paperboard operations at MPC **[November 1996]**. This plan includes the following:

1. A listing of MPC personnel qualified to act as response coordinators in the event of an emergency.

2. The procedures proposed to prevent pollution of the waters of this state from unloading, storage and use areas.

3. The emergency clean-up procedures to be used in the case of a spill, discharge, seepage, runoff, or leakage of polluting material into the waters of this state.

This plan was prepared by Dell Engineering, Inc. of Holland, Michigan, with considerable assistance from MPC personnel. Questions concerning this plan may be directed either to **Carol Quinn [November 1996]** of Dell Engineering, Inc., 616-399-3500, or to **Harry Snyder [November 1996]** of MPC, 616-963-4004. To the extent necessary, this plan shall be periodically updated to maintain the maximum degree of protection of personnel, property, and the environment.

PLAN REVIEW AND UPDATE RECORD

Michigan Paperboard Company
79 East Fountain Street
Battle Creek, Michigan 49016

THIS EMERGENCY RESPONSE/SPILL PREVENTION PLAN HAS BEEN REVIEWED AND UPDATED WITH CHANGES SUBMITTED TO THE APPROPRIATE INDIVIDUALS, AS OF:

DATE	PLAN	BY	REPRESENTING
November 1996	**SPCC/PIPP**	**Carol D. Quinn, P.E.**	**Dell Engineering, Inc., Holland, Michigan**
June 1996	**SWP3**	**Carol D. Quinn, P.E.**	**Dell Engineering, Inc., Holland, Michigan**
April 1988	SPCC/PIPP	Gregg Patrick	Dell Engineering, Inc. Holland, Michigan

NOTE:

All November 1996 revisions to the SPCC/PIPP have been noted by one or a combination of the following methods:

1. Deletions shown by a single line through text.

2. Phrase, sentence, or paragraph additions shown in bold lettering followed by **[November 1996]**; or

3. Updated pages indicated by **11/96** footnote at bottom left-hand corner of page.

CERTIFICATION INFORMATION

A. FACILITY: Michigan Paperboard Company **[November 1996]**

B. TYPE OF FACILITY: Paperboard Mill

C. YEAR OF INITIAL OPERATION: 1912

D. FACILITY LOCATION: 79 East Fountain Street
Battle Creek, MI 49017

E. NAME AND ADDRESS OF OWNER:
Michigan Paperboard Company **[November 1996]**

79 East Fountain Street
Battle Creek, MI 49017

F. DESIGNATED PERSON RESPONSIBLE FOR OIL SPILL PREVENTION:
Harry Snyder [November 1996]

G. OIL SPILL HISTORY: This facility has experienced no significant oil spill event during the twelve months prior to January 10, 1974, nor thereafter.

H. MANAGEMENT APPROVAL: Full approval is extended by Management at a level with authority to commit the necessary resources.

Signature Harry Snyder Title Plant Engineer
Harry Snyder [November 1996] Plant Engineer

Date Nov. 15, 1996

DELL ENGINEERING, INC.

PROFESSIONAL ENGINEER CERTIFICATION: In accordance with 40 CFR 112.3 (d), I hereby certify under penalty of law that I have personally examined the facility, and being familiar with the provisions of 40 CFR, Part 112, attest this SPCC Plan has been prepared in accordance with good engineering practices. Furthermore, based on my inquiry of those persons immediately responsible for obtaining the information contained in this report, I believe that the information is true, accurate, and complete.

Signature Leroy R. Dell

Name (printed or typed) Leroy R. Dell

Date: 8 19-88

Registration Number: 19098

State: Mich

Seal:

SPCC PLAN OWNER'S REVIEW

As required by 40 CFR, Part 112.5 (b), "a review and evaluation of the SPCC Plan at least once every three years from the date such facility becomes subject to this part," is required of the owner. The result of this review may be an amended SPCC Plan, which must be certified by a Registered Professional Engineer. The amended plan would "include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review."

If major changes to the facility have occurred in the interim, and these changes were not made part of the plan, the plan must be updated and recertified by a Professional Engineer. If no amendment is necessary, a qualified owner's representative should indicate below that review was conducted and certify that "No amendment is necessary as per 40 CFR, Part 112.5(b)."

Facility name, Location or Company Letterhead Michigan Paperboard Co., 79 E Fountain, Battle Creek, MI 49017

Reviewed On Nov. 15, 1996, Amendment # 1

Owner's Representative John T. Goll, Jr.

Title President

Signature

(The next review date is November 1999) (3 years later)

This certification shall be kept on file with this plan for a minimum of three (3) years.

OFF-SITE PLAN DISTRIBUTION LIST

THIS SPCC/PIPP/SWP3 HAS BEEN FILED WITH, AND ALL CHANGES SHOULD BE SUBMITTED TO, THE FOLLOWING GROUPS:

NAME:	**Dell Engineering, Inc.** 3352 128th Avenue Holland, Michigan 49424-9263
CONTACT:	**Carol D. Quinn, P.E. [November 1996]**
PHONE NUMBER:	616-399-3500
NUMBER OF COPIES:	1
NAME:	**Michigan Paperboard Company** 79 East Fountain Street Battle Creek, Michigan 49016
CONTACT:	**Harry Snyder [November 1996]**
PHONE NUMBER:	616-963-4004
NUMBER OF COPIES:	8
NAME:	**Michigan Department of Environmental Quality** **Waste Management Division** Jackson District Office 301 East Louis Glick Jackson, Michigan 49201
CONTACT:	Jackson County Representative
PHONE NUMBER:	517-780-7900
NUMBER OF COPIES:	1

ON-SITE PLAN LOCATION SUMMARY

THIS SPCC/PIPP/SWP3 IS ON FILE IN THE FOLLOWING OFFICES AT MICHIGAN PAPERBOARD COMPANY'S FACILITY:

1. **PLANT ENGINEER**
2. **GENERAL MANAGER**
3. **OPERATIONS MANAGER**
4. **TECHNICAL SUPERINTENDENT**
5. **ASSISTANT TECHNICAL SUPERINTENDENT**
6. **SAFETY MANAGER**
7. **HUMAN RESOURCES DIRECTOR**
8. **MILL SUPERVISOR**

Phone: **269-963-4004**

No. of copies: **8**

In addition to the above, Section 7.1 INTERNAL ALERT PROCEDURES copies have been posted in the locations of MSDSs in each department.

As needed, revisions of the Emergency Notification List are handled by the Safety Director.

04/04/03

MICHIGAN PAPERBOARD COMPANY
SPCC/ PIPP/ SWP3

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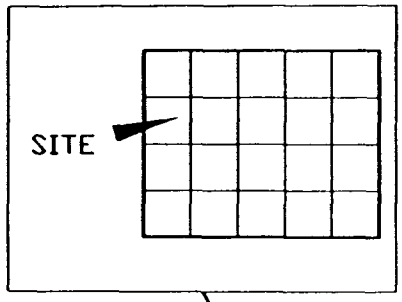
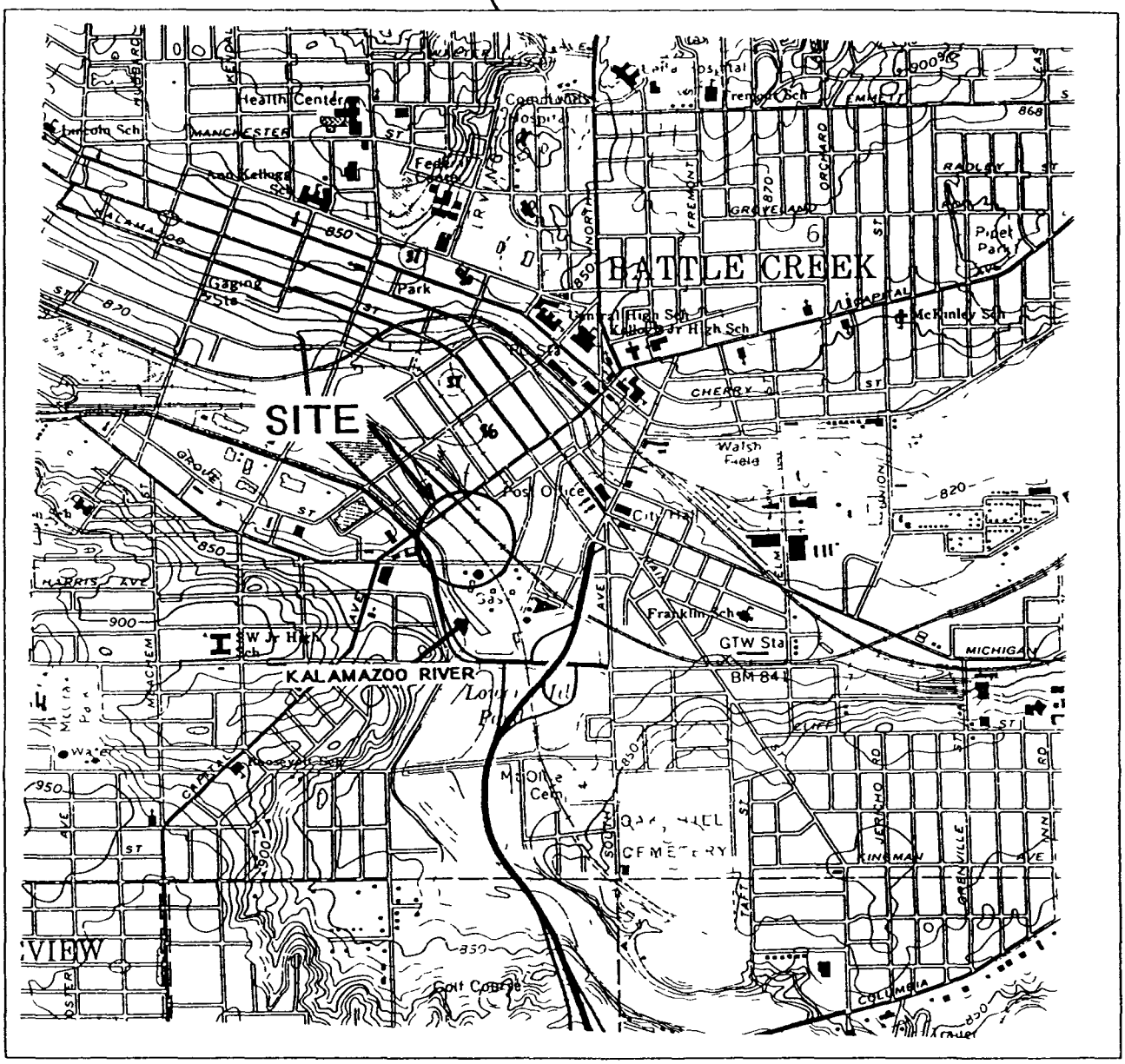
1.0 INTRODUCTION

The following Pollution Incident Prevention Plan (PIPP)/Spill Prevention Control and Countermeasure (SPCC) Plan/Storm Water Pollution Prevention Plan (SWP3) was developed for the paperboard operations at Michigan Paperboard Company (MPC), Battle Creek, Michigan. This plan was developed to provide procedures and information to prevent potentially harmful materials used or generated at MPC from entering the ground and surface waters and the City of Battle Creek Wastewater Treatment Plant. In addition, this plan provides chemical material information desired according to State and Federal Community Right-To-Know regulations. The location of the MPC plant is shown in Figure 1 and a Site Plan/Chemical Material Storage Summary is located in Appendix A.

A Storm Water Pollution Prevention Plan (SWP3) is required for all facilities who have coverage under Michigan's General Storm Water Permit for Industrial Activities (NPDES Permit No. MIR000000). The General Storm Water Permit applies to Michigan facilities that have a point source discharge of "storm water associated with industrial activity" to surface waters of the State. MPC applied for coverage under the General Permit because of outside storage of equipment, wood pallets, hoppers and other miscellaneous materials. Storm water from these areas flows through the site drainage system and eventually through Outfalls 001 and 002 into the Kalamazoo River [November 1996].



SECTION 1, T.2S. – R.8W.
CITY OF BATTLE CREEK
CALHOUN COUNTY
MICHIGAN



SITE LOCATION MAP

ADAPTED FROM USGS
BATTLE CREEK QUADRANGLE, 1961

<9601004> 50426W04 3/19/96
REVISIONS ARE TO BE MADE ON THE CADD FILE ONLY

MICHIGAN PAPERBOARD COMPANY

79 EAST FOUNTAIN STREET
BATTLE CREEK, MICHIGAN

950426

FIGURE 1

DELL ENGINEERING, INC.

Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263

MPC manufactures quality paperboard products for the food industry with the majority of their total output going to cereal boxes. The operation consists of several steps and procedures beginning with the processing of the recycled waste paper, cardboard and/or wood pulp.

The waste materials and wood pulp are broken down by water and chemicals into a slurry or paper pulp. At this stage of production, compounds are added to obtain the desired properties of the final product, such as strength, texture and durability.

Upon reaching the proper consistency, the paper pulp is fed into the paper machinery. The paper machine uses pressure and heat to form the paper pulp into a large continuous sheet. The continuous sheet is collected into a large roll and sheared when the roll has reached the proper capacity.

At this stage, the paperboard is a dull gray-brown color. Final product colors and markings are either laminated onto the paperboard surface or directly printed on the paperboard surface using blends of latex paints. The finished paperboard products are then shipped to another facility for the pattern development and carton assembly.

2.0 COMPANY BACKGROUND

2.1 GENERAL

Facility Name:	Michigan Paperboard Company 79 East Fountain Street Battle Creek, Michigan 49017 616-963-4004	**[November 1996]**
Contact Person:	**Harry Snyder** **Plant Engineer**	**[November 1996]**
SIC Code:	2631 (Paperboard Mill)	

Facility Description:

MPC employs approximately 200 people and is engaged in the production of paperboard from waste paper and pulp. The plant operating area is approximately 2.7 acres on a site encompassing approximately 5.3 acres. The square footage of office area is about 16,000 square feet and the manufacturing and storage areas are about 117,700 square feet total. Paperboard has been produced at this facility since 1912.

The facility operates 24 hours per day, seven (7) days per week with the exception of scheduled shutdowns. At this time, MPC ceases operations two (2) days per year, Christmas Eve and Christmas.

A full list of Material Safety Data Sheets (MSDS) for the raw materials utilized at this facility are included in Appendix B.

2.2 ACCESS

The MPC facility is accessible by three (3) drives connected to East Fountain Street. See Appendix A for a Site Plan/Chemical Material Storage Plan.

2.3 SECURITY AND SURVEILLANCE

Visitors are required to check in at the Mill Office and Reception Area. In the event of an emergency, site emergency personnel are available twenty-four hours a day, seven days per week, at the numbers indicated in Section 7.1. Adequate exterior lighting is provided and/or available for nighttime inspection of potential spill areas and for any night-time clean-up operations, if necessary. The entrance to the fuel oil storage room in the basement level is locked at all times with access available only to key personnel.

3.0 CHEMICAL MATERIAL STORAGE

Raw materials and in-process materials are stored at various locations throughout the facility. The liquids are either stored in interior storage tanks or refillable totes which are exchanged periodically. Dry, solid materials are received bagged or in bulk form. It should be noted that the facility is making an effort to eliminate the use of 55-gallon drums; therefore, the storage and handling of filled and empty drums may not be of concern in the future. In general, these materials are stored temporarily in the vicinity of the loading dock where they are received (see Appendix A) and are later transferred to their areas of use.

Table 1 provides a summary of the materials stored at MPC, including the units of storage, primary storage location, and maximum amount stored. A Site Plan/Chemical Material Storage Summary is presented in Appendix A. More detailed information about the materials is given on the Material Safety Data Sheets (MSDS), included in Appendix B. From time to time, Table 1 will be updated to reflect the addition or deletion of any materials utilized.

3.1 FUEL OIL STORAGE

The MPC facility operates their own power generation plant. The power plant can be powered by either #6 fuel oil or natural gas. MPC can store up to 100,000 gallons of fuel oil in two (2) 50,000 gallon tanks. The steel tanks are all located in one drainless room on the basement level, as indicated by **"A1"** on the Material Storage Plan in Appendix A. The only access to the room is provided by a stairway from the main floor. The entrance to this room is locked at all times with access available only to key personnel. If either of the tanks develop a leak, the fuel oil would be contained within the room itself. The containment capacity of the storage room is approximately 237,000 gallons. A figure showing the dimensions of the storage room and tanks is included in Appendix A **[November 1996]**.

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
No. 6 Fuel Oil	Petroleum distillate	Petroleum residual (50-80%)	Two (2) 50,000 gallon steel tanks	Power Plant, Basement	Power Plant, Basement	100,000 gallons
		Distillate fuel (10-30%)				
		Hydrogen sulfide (<0.01%)				
		Clarified oil (0-10%)				
Latex RES 3103	**Vinyl Acetate/Acrylic (Binder)**	**Acrylic copolymer (49-51%)**	**Two (2) 5,000 gallon fiberglass resin tanks and One (1) 10,000 gallon stainless steel tank**	**Coating Room**	**Coating Room**	**20,000 gallons**
		Vinyl acetate (<0.09%)				
		Acetaldehyde (<0.095%)				
		Acrylic monomers (<0.1%)				
		Water (49-51%)				
Ti-Pure RPS Vantage	Titanium Dioxide - pigment	Titanium dioxide (97.5-99.9%)	One (1) 141,000# Tile Bulk Tank	Coating Room	Coating Room	141,000 pounds
		Aluminum hydroxide (0-1.2%)				
		Water (27.5-29.5%)				

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Kaogloss #1 clay slurry	Hydrous aluminum silicate clay	Hydrous aluminum silicate	One (1) 208,000# Tile Bulk Tank	Coating Room	Coating Room	208,000 pounds
Kaobrite #2 clay slurry	Hydrous aluminum silicate clay	Hydruos aluminum silicate	One (1) 33,000 gallon Tile Bulk Tank	Coating Room	Coating Room	486,750 pounds 33,000 gallons
Acrysol E-2961	Acrylic polymer thickener	Ammonium salt of acrylic polymer (10-12%)	Two (2) 3,300 gallon Bulk Tank	Coating Room	Coating Room	7,000 gallons
		Residual monomers (<0.1%)				
		Ammonia (0.2%)				
		Water (88-90%)				
Paper Process - Nalco 7530	Polymer	Ethoxylated alcohol (1-5%)	One (1) 4,000 gallon Bulk Tank	Old Engine Room	Old Engine Room	4,000 gallons
		Severely hydrotreated light distillate (20-40%)				
Hercon 75	Sizing Agent	N/A	One (1) 4,000 gallon Bulk Tank	Old Engine Room	Old Engine Room	4,000 gallons
Sodium Chloride	Rock Salt	Sodium Chloride	One (1) Concrete Storage Tank	Power Plant	Power Plant	40,000 pounds - estimate
Betz 6304 B	Polymer	Sodium Hydroxide	One (1) 1,500 gallon Fiberglass Tank	Power Plant	Power Plant	1,500 gallons

TA 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Opti-trol 4000	Water Treatment Chemical	3-Methoxy propylamine	One (1) 1,500 gallon Fiberglass Tank	Power Plant	Power Plant	1,500 gallons
		Cyclohexylamine				
CW-1720	Biocide	2,2-Dibromo-3-nitrilopropionamide (20%)	Tote-Bin	3-Story Warehouse	1. Beater Room 2. Filler Side 3. AES Room	5,000 pounds
Nalco 7569	Defoamer	N/A	Tote-Bin	3-Story Warehouse	Beater Room	6,500 pounds
Nalco 7562	Defoamer	N/A	Tote-Bin	3-Story Warehouse	Filler Side	7,000 pounds
Nalco 7647	Biocide	5-Chloro-2-methyl-4-isothiazolin-3-one (1.15%)	Tote-Bin	Beater Room Coating Room	Beater Room Coating Room	300 gallons
		2-Methyl-4-isothiazolin-3-one (0.35%)				
Nalco 7594	Felt Cleaner	Acetic acid (1-5%)	Tote-Bin	3-Story Warehouse	Beater Room	6,850 pounds
		Ethylene glycol monobutylether (20-40%)				

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Nalco 7597	Felt Cleaner	Nonionic surfactant (1-5%)	Tote-Bin	3-Story Warehouse	Beater Room	8,600 pounds
		Potassium hydroxide (5-10%)				
		Sodium hydroxide (10-20%)				
Nalco 7627	Pitch Dispersant	N/A	Tote-Bin	3-Story Warehouse	Power Plant	7,650 pounds
Grain Processing K570	Starch	Starch (88%)	Super Sack-Bag	Finishing Shipper	Finishing Shipper	100,000 pounds
Elvanol 71-30	PVA	Vinyl Alcohol Polymers, Copolymers (0-99%)	50# /Bag	Warehouse	Machine Room	<10,000 pounds
		Methanol (<3.2%)				
		Sodium Acetate (<1.4%)				
		Process Aids (0-3%)				
Henkel Foamaster VF	Defoamer	Trade Secret (100%)	Tote-Bin	Coating Room	Coating Room	8,000 pounds
Henkel Foamaster DF-177-F	Defoamer	Trade Secret (100%)	Tote-Bin	Finishing Shipping	Finishing Shipping	6,600 pounds

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Sodium 15% Hypochlorite	Bleach	Sodium Hypochlorite	Tote-Bin	3-Story Warehouse	Beater Room	600 gallons
Drumond Q-V - ECTH	Water Treatment Chemical	Hydrochloric Acid (25%)	Drums	Power Plant	Power Plant	55 gallons
Liquid caustic soda	Water Treatment Chemical	Sodium Hydroxide (96-100%)	Drums	Power Plant	Power Plant	55 gallons
Betz KI - 2	Ion Exchange Resin Cleaner	Citric Acid	Tote-Bin	Power Plant	Power Plant	300 gallons
Betz: Sulfite 3	Waterbase dissolved oxygen scavenger	Sodium Bisulfite (30-40%)	Tote-Bin	Power Plant	Power Plant	300 gallons
Mississippi Lime Hydrated	Hydrated Lime	Calcium Hydroxide	Bags	Power Plant	Power Plant	12,000 pounds
Remosil	Magnesium Oxide (powdered)	Magnesium Oxide	Bags	Power Plant	Power Plant	3,000 pounds

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Betz FS - 22	Fuel Treatment	Petroluem Distillate	Drums	Power Plant	Power Plant	400 gallons
		Solvents				
		Hydrotreated Petroleum Distillate				
		Solvent Petroleum Distillate				
		Napthalene (3-7%)				
Betz FS - 538	Fuel Treatment	Mineral Oil	Drums	Power Plant	Power Plant	400 gallons
		Sulfonic Acids				
Betz 1100	Polymer	N/A	Bags	Power Plant	Power Plant	300 pounds
Betz Corrogen	Oxygen Scavenger	Sodium Sulfite	Drums	Power Plant	Power Plant	1,000 pounds
Hydrochloric Acid	Acid	Hydrochloric Acid (5-10%)	Bottle CAR boys	Power Plant	Power Plant	300 gallons
Betz Chelant	Water Treatment Chemical	Trisodium Salt	Drums	Power Plant	Power Plant	55 gallons
		Tetrasodium Salt				
		Sodium Hydroxide (<3%)				

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Drumond Perpetrator	Solvent for Maintenance Purposes	Petroleum Distillates (30-65%)	Drums	Power Plant	Power Plant	35 gallons
		Aromatic Naptha 150 (30-65%)				
		Propylene Glycol T-Butyl Ether (1-5%)				
		Dipentene (1-5%)				
		Xylene (1-5%)				
Mobil - Multi-Purpose ATF	Oil	N/A	Drums	Power Plant	Power Plant	110 gallons
Mobil - DTE extra heavy	Oil	N/A	Drums	Power Plant	Power Plant	110 gallons
Mobil - DTE heavy	Oil	N/A	Drums	Carton Department/ Power Plant	Power Plant	200 gallons
Mobil - DTE 797	Oil	N/A	Drums	Carton Department/ Power Plant	Power Plant	550 gallons
Kerosene	High Pressure Washer Chemical	Kerosene (100%)	Drums	Carton Department/ Power Plant	Power Plant	110 gallons
Betz AFS	Antifoam Agent	N/A	Drums	Carton Department/ Power Plant	Power Plant	55 gallons

TABLE 1

CHEMICAL MATERIAL STORAGE SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRODUCT TYPE	HAZARDOUS CONSTITUENTS	UNIT OF STORAGE	PRIMARY STORAGE LOCATION	IN PROCESS STORAGE LOCATION	MAXIMUM STORAGE QUANTITY
Aeon 4000 Gardener Denver	Lubricant	Paraffinic Oil (>98%)	5 gallon pail	Carton Department/ Power Plant	Carton Department/ Power Plant	55 gallons
		Acrylic Polymer (<1%)				
		Organo-zinc additive (<1%)				

NOTES:

- Refer to Site Plan/Chemical Material Storage Plan (Appendix A) for chemical storage locations.

3.2 FILTER ROOM CHEMICALS

A paper process polymer, Nalco 7530, is stored in one of two 4,000-gallon reinforced fiberglass tanks located in the filter room as indicated by **"G1"** on the Site Plan/Chemical Material Storage Summary. **Hercon 75 ("H1") is stored in the other tank.** A containment curb encircles the tanks which are situated next to each other. This curb will provide containment in such a manner that if a spill should occur, it will restrict the area of the spill **[November 1996].**

Within this containment area is a floor drain which discharges to the basement level. Once the material reaches this level, it will be collected by trench drains and flow to a sump pit. Non-contact cooling water is collected in the sump pit and is discharged to the Kalamazoo River. In the event of a chemical material spill, a switch on the sump pump can be turned off to provide total containment. It should be noted that to the best of our knowledge, MPC does not utilize any incompatible pollutants; therefore, this system of total facility collection and containment applies to all storage tanks located within the building.

3.3 BOILER TREATMENT CHEMICALS

Located adjacent to the new filter room is the power plant building. This portion of the Michigan Paperboard facility houses the boilers, turbines, and generators used for producing electrical power for the plant. Scaling and corrosion can occur in most types of boiler systems and MPC maintains a supply of boiler treatment chemicals on site. Two (2) 1,500-gallon fiberglass reinforced poly tanks are located in the power plant building for this purpose, as shown by **"J1"** and **"K1"** on the Site Plan/Chemical Material Storage Summary. One tank contains **Opti-trol 4000** and the other contains **Betz Balanced Polymer 6304 B**. The tanks are installed on a concrete platform approximately 12 inches above the floor. **The tanks are provided with concrete secondary containment.** The floor slopes away from the entrances and towards the floor drains. Also, the floor is approximately 18" below grade at this portion of the

building, which provides a physical containment barrier for any spills that may occur in the building **[November 1996].**

3.4 PRECOATS, TOPCOATS AND PIGMENTS

The remaining bulk liquids are stored in tanks located in the coating area, which is below grade on the basement level. The mixing of precoats, topcoats and pigments takes place in this area. Three (2) fiberglass reinforced poly tanks store latex and two (2) clay tile, brick lined tanks store DuPont Ti-Pure Titanium Dioxide and **Kaogloss #1 clay slurry** and **Kaobrite #2 clay slurry**. The Titanium Dioxide tank, as indicated by **"C1"** on the Site Plan/Chemical Material Storage Summary, can store approximately 141,000 pounds, but it is never kept full. The clay slurry tanks can store approximately 208,000 pounds and are designated by **"D1"** and **"E1"** on the Site Plan/Chemical Material Storage Summary. Latex Res 3103 is stored in two (2) 5,000-gallon tanks and one (1) 10,000-gallon tank and are situated adjacent to each other, as shown by **"B1"**. Two (2) 3,300-gallon tanks containing Acrysol E-2961 coating are located at **"F1"**. No containment curbs are provided for these tanks in the coating area because the collection sump is in the vicinity and the room itself provides total containment **[November 1996].**

3.5 TOTES AND BAGGED MATERIALS

MPC receives other liquid chemicals, but these are delivered in 400-gallon exchangeable totes. The totes are placed in close proximity to where the material is utilized and are exchanged when they are empty. The totes are stored in the interior of the building, near the operations for which they are used. The interior of the building offers physical containment for any spills which may occur. The building has concrete floors and concrete lower walls approximately 24 inches high with brick construction for the remainder of the wall. The concrete floors and walls are in good condition to contain any liquid spills that may occur **[November 1996].**

Dry solids are received at three different locations at MPC. The majority of the materials are bagged or drummed and delivered to two loading dock areas. The exception to this is rock salt (**"I1"**), which is received bulk at a rate of 15 tons. The rock salt is stored in a concrete vault, which is drainless and totally enclosed, located in the unloading Dock F-9 area.

The bagged materials, in general, are inert and nontoxic and stored in or near the loading dock where they are received. Elvanol (**"U5"**) and **Grain Processing K-570 ("T2")** are delivered on pallets. The bags are transported to the back or sides of the loading dock for storage and used as needed.

Physical containment is not required for the dry solid material for several reasons. The material, being dry and solid, is not free flowing and can be contained and cleaned up by simple physical means, such as with a shovel and broom. If a spill should occur, there is a good possibility that only one or two bags of material would be released that require clean-up. The dry bagged material is also inert, nontoxic and nonreactive.

4.0 CHEMICAL MATERIAL HANDLING

4.1 GENERAL

MPC unloads all of the bulk liquid materials along the north side of the plant in an area designated "Chemical Receiving and Unloading Dock F-9" as shown on the enclosed drawing (see Appendix A). The greatest distance from an unloading port to a corresponding storage tank is the titanium dioxide unloading line which is approximately 100 feet from unloading port to storage tank. The remainder of the unloading lines vary in length from 10 feet to 80 feet. A brief description of the unloading procedures for each material received in the Dock F-9 area follows.

4.2 BULK UNLOADING PROCEDURES

A shipment of Nalco 7530 Paper Process and **Nalco 7569 Antifoam** and **Nalco 7562 Antifoam** are received at a frequency of once every 35 days. A tanker truck with separate compartments (tanks) delivers approximately 3,000 gallons of Paper Process and 2,000 gallons of Antifoams **[November 1996]**.

MPC has two (2) 4,000-gallon Paper Process storage tanks. The tanks are used in a rotational manner, such that, when one tank is full and its contents being utilized, the other tank is empty. As the contents of the tank currently in use diminish to a predetermined level, a shipment arrives to fill the empty tank not in use. This method of tank use allows for the total consumption of the contents of the tank currently in use and the convenience of having the second tank standing by ready for use.

The two Paper Process tanks are cross-connected at the top which provides overflow protection during filling operations. As stated earlier, since one tank is near empty during filling, there is ample capacity available for excess material in the event of an overflow situation. Upon completion of the filling operations, the end of the filling line nearest the building is capped and

emptied back into the tanker. During the chemical unloading operation, an employee of MPC is present at all times as well as the truck driver, which further decreases the potential for a spill occurrence due to negligence.

The Antifoam, as stated earlier, is delivered by the same truck as the Paper Process. The unloading procedure, including the capping and emptying of fill lines, is similar to that of the Paper Process with the exception of the overflow protection. MPC has only one Antifoam storage tank, so greater caution is used during filling operations.

The power plant receives fuel oil deliveries in quantities ranging from 5,000 gallons to 12,000 gallons. The large quantity of fuel oil being delivered is due to the fact that the power plant required approximately 23,000 gallons per day in order to provide adequate electrical power to the MPC plant.

The fuel oil is gravity drained from the tanker truck to the storage tanks by MPC. In using this unloading procedure, the line from the tanker truck to the unloading port is emptied prior to disconnection, effectively eliminating any small spills of fuel oil that may remain in the hose. As with the chemical unloading, an employee with a position of responsibility supervises the unloading procedure and the truck driver is required to be present in case a spill occurs.

The power plant also receives the two (2) boiler additives, **Betz Balanced Polymer 6304B** and **Opti-trol 4000**. Both materials are stored in 1,500-gallon fiberglass reinforced poly tanks, but only 750 gallons of each additive is delivered per shipment. The tanks are only filled to half capacity to allow for overflow protection. Exterior unloading ports are not provided for either of these tanks; therefore, a line must be run approximately 25 feet from the truck to the storage tank access way. The lines are capped and returned to the truck upon completion of the unloading operation **[November 1996]**.

Bulk rock salt is delivered by truck in quantities of approximately 15 tons per delivery. The rock salt is simply transferred from the truck to a concrete vault located inside the building. The

rock salt is dumped through an access door in the floor of a small loading dock in Area F-9. **A tarp is spread out prior to the rock salt delivery in the F-9 Dock area to collect and contain spilled rock salt and to protect a nearby storm sewer catch basin.** Additionally, good housekeeping practices should prevent any rock salt, remaining on the loading dock, from entering the waters of the State **[November 1996]**.

Clay slurry is delivered by rail car. The slurry is pumped from the rail car to the clay slurry tank located in the coating room. Upon the completion of the unloading operation, the lines are purged back into the rail car with air pressure. This method appears to be satisfactory in reducing the clay build up around the railroad siding tracks. A routine clean-up of the area can collect the small amounts of clay that may accumulate.

Latex is delivered by tanker truck. The unloading procedure is very similar to the other materials delivered by tanker truck with the exception of the line cleaning and disconnection. Clean water is pumped into the latex tanker after the tanker has completely emptied its load into the storage tanks in the coating room. This procedure thoroughly removes the remaining latex from the lines back into the tanker, thus eliminating any back flow of latex from the unloading line onto the ground.

Titanium dioxide slurry is delivered by tanker truck at a rate of 40,000 pounds per delivery. The unloading procedure here is also very similar to that of the clay slurry delivered by tanker truck to MPC.

4.3 TOTES AND BAGGED MATERIAL

There are three (3) unloading docks which handle bagged materials and one (1) unloading dock that handles totes. Inert bagged materials are received at F-5 unloading dock. A fork truck unloads the pallets from the delivery truck and transports the material to the opposite end of the unloading dock, which is the permanent storage area for these materials.

Exchangeable totes are received at unloading dock F-6. The totes are unloaded with a fork truck and delivered to a staging area. From there, the drums and totes are transported to the area where the material will be utilized.

4.4 CONTAINMENT PROCEDURES

Secondary containment is provided in unloading area F-9 in the form of collection sumps. Collection sumps are located beneath the unloading ports for fuel oil, latex and titanium dioxide. These sumps collect any flow from the hoses or lines during connection and disconnection, leaks during unloading operation and any accidental spills that may occur nearby.

The sump beneath the fuel oil unloading port is a drainless sump. It must be periodically inspected to determine if it must be pumped out. A visual inspection of the sump should be made each time a tanker truck is being unloaded. This should be adequate in providing ample time to have the sump emptied as necessary.

The sump located beneath the latex and titanium dioxide unloading ports, on the other hand, is designed to collect material and drain it to the collection sump located in the coating room. This provides a very satisfactory secondary containment system because the area is quite large.

Containment procedures for bulk materials unloading in the area of Dock F-9 are:

1. Cover or dike storm sewer manholes in unloading dock area in order to prevent discharge of spilled material to the storm sewer system and ultimately the Kalamazoo River. This can be done either using plastic membrane spread over the manhole and covered with sand or using oil booms to dike around the manhole.

2. Notification of proper personnel on the emergency spill notification list (Section 7.1).

3. Take measures to control source of spill.

4. If magnitude of spill permits, clean up utilizing information in the Material Safety Data Sheets for proper handling and safety precautions. Proper disposal of cleaned up spill

material should be evaluated and determined by **Harry Snyder, Plant Engineer [November 1996].**

As for the interior of the building, floor drains located near most tanks will convey any spilled material to the collection sump in the coating room. Therefore, any spill that may occur while piping materials from the receiving area to the various storage locations or during normal manufacturing procedures will be contained by the building itself, but immediate containment of any spill is preferable to material reaching the floor drains. **The two (2) 1,500-gallon fiberglass reinforced poly tanks, which contain Opti-trol 4000 and Betz 6304B Balanced Polymer and are located in the power plant building, are provided with secondary containment [November 1996].** The containment procedures for the interior of the building in the event of a spill are the same as those listed above, with the exception of No. 1.

1. For small spills, cover or dike floor drains (sanitary sewer drains) to prevent discharge to the wastewater treatment plant. This can be done either using plastic membranes spread over the drain and covered with sand or using oil booms to dike around the drain. For large spills, allow materials to flow to drains and to the collection sump. Turn the sump pump off until the spill can be evaluated.

2. Notification of proper personnel on the emergency spill notification list (Section 7.1).

3. Take measures to control source of spill.

4. If magnitude of spill permits, clean up utilizing information in the Material Safety Data Sheets for proper handling and safety precautions. Proper disposal of cleaned up spill material should be evaluated and determined by **Harry Snyder, Plant Engineer [November 1996].**

Any undetected and unreported spills could be harmful to the employees of MPC, the MPC facility, and possibly the general public. It is important when a spill is observed that each employee follows the proper containment and notification procedures. If any employee does not have access to the PIPP/SPCC/SWP3, he should notify his immediate supervisor, who should know what the situation requires.

5.0 EMERGENCY PROCEDURES

In the event of a fire, explosion, chemical spill, or any other unplanned release of chemical materials/hazardous waste, the following steps will be taken, as outlined below, to provide suitable response. **A flowchart summarizing these response tasks titled "IN THE EVENT OF A SPILL" is included in the front of this plan [November 1996].**

5.1 GENERAL RESPONSE TASKS FOR CHEMICAL SPILLS AND LEAKS

For hazardous spills, the person discovering the spill is responsible for contacting a Facility Emergency Coordinator according to Section 7.1 INTERNAL ALERT PROCEDURES, and providing information on the size, nature and location of the release. For nonhazardous spills, inside building and less than approximately five (5) gallons, associated with routine work conditions and person(s) primarily responsible for use, the spill is cleaned up internally using absorbent, etc.

For nonhazardous spills greater than approximately sixty (60) gallons and in the event of a hazardous spill, regardless of the quantity, the following measures must be implemented:

1. The person discovering the release, in the form of a leak, spill, or other event, is responsible for contacting a Facility Emergency Coordinator and providing information on the size, nature, and location of the release.

2. Upon examination of the situation, a Facility Emergency Coordinator should contact the Primary Facility Emergency Coordinator according to Section 7.1, INTERNAL ALERT PROCEDURES, and describe the problem.

3. The Primary Facility Emergency Coordinator is then responsible to notify the Site Emergency Support Personnel for recovery, clean-up, and decontamination, if needed.

4. If the spill or leak is greater than approximately five (5) gallons and/or involves a hazardous material, evacuation of the immediate area may be necessary.

5. In the event of a first-aid emergency, a Facility Emergency Coordinator should be contacted with the nature and location of the problem. First aid should be administered by properly trained personnel, if necessary. If EMS has been contacted, someone should be posted at the main entrance to direct them to the proper area.

6. The Facility Emergency Coordinator(s) have the authority to respond to the emergency with the necessary equipment and are provided with assistance by other personnel as necessary and feasible.

   a. If the emergency is a small, easily controlled spill and relative hazards are minimal, the following steps may be taken by site personnel:

      i. Refer to the MSDS (Appendix B) to obtain physical and chemical information (i.e., flashpoint, vapor pressure, solubility, etc.) as well as safety precautions and particular clean-up methods. The full SPCC/PIPP/SWP3 should be retrieved from its central location (see page ix, ON-SITE PLAN LOCATION SUMMARY).

      ii. If a tank is leaking, the Facility Emergency Coordinator(s) should be contacted. Attempt to control or stop the leaking but avoid all direct contact with the product.

      iii. For general responses, take measures to contain the area of the spill using spill absorbents. Make best efforts to prevent the spill from reaching any storm water drainage systems or other possible escape routes. This may be done by placing absorbent material or blocking the spill pathway with a dike, or channeling the spill into a secure spot. Should any amount of material reach the storm water collection and conveyance system, the Facility Emergency Coordinator must be notified so that appropriate notifications can be made.

iv. The Facility Emergency Coordinator(s) identified in Section 7.1, INTERNAL ALERT PROCEDURES, should attempt to neutralize the spill if needed and recover the spilled material using available equipment. The container(s) into which the spilled chemical(s) is placed must be inspected to ensure it is structurally sound, leak proof, and chemically resistant.

v. After the waste has been properly packaged, the waste will then be properly labeled according to applicable DOT regulations on hazardous materials. Clean-up contractors may be of assistance when labeling the wastes with proper stickers; however, labeling is ultimately the waste generator's responsibility (i.e., Primary and Secondary Facility Emergency Coordinators at the site).

vi. Following recovery, the Facility Emergency Coordinators are responsible for clean-up/decontamination of the area where the spill occurred according to the MSDS. They are also responsible for decontamination of the protective equipment and tools (i.e., brooms, shovels, etc.) used during recovery. If the material spilled was hazardous, then material that comes in contact with it is also considered hazardous. All items that were contaminated, or came in contact with the spill, must be decontaminated before entering a clean area. It will be necessary to properly dispose of certain items (i.e., cleaning will not be sufficient).

vii. The Facility Emergency Coordinator on-site is responsible for any required reporting of the spill to local, State and/or Federal authorities and to the appropriate MPC personnel as described by Section 7.1, INTERNAL ALERT PROCEDURES. The Emergency Spill Notification Form (Appendix C) can be used in preparation to notify the appropriate authorities, if required. Refer to Section 7.3, REQUIRED REPORTING, for determination if it will be necessary to report a chemical spill.

viii. Both the Primary and Secondary Facility Emergency Coordinators must submit a written record of the measures taken and the materials used to

contain, clean-up, and decontaminate the spill. Along with any notes on which personnel performed what duties, these reports must be kept on file at the site. A Spill History Report Form is included in Appendix C and will be used at the site to record any spill or leaks.

b. For spills of a larger nature, the Primary Facility Emergency Coordinator is responsible for contacting an off-site approved clean-up contractor (refer to Section 6.2, APPROVED WASTE HAULERS FOR EMERGENCY CONTAINMENT AND CLEAN-UP). Absorbent materials/containment booms can be placed in open drains by Primary and Secondary Facility Emergency Coordinators to prevent a spill from reaching surface waters.

7. Action should not be undertaken to burn or chemically treat the spill without the approval of a designated Facility Emergency Coordinator listed in 7.1, INTERNAL ALERT PROCEDURES.

5.2 GENERAL RESPONSE TASKS FOR FIRES AND EXPLOSIONS

1. If the emergency is a small fire, then properly trained personnel should combat the fire with extinguishers located in the maintenance building, office, or site manager's office (see SITE PLAN/CHEMICAL MATERIAL STORAGE SUMMARY, APPENDIX A). The nature, size, and location of the fire must be communicated to a Facility Emergency Coordinator. Properly trained personnel should continue to combat the fire until the Battle Creek Fire Department and other emergency vehicles arrive. Select personnel should be assigned to wait for the vehicles at the main East Fountain Street entrance and other appropriate locations until all responders have arrived.

2. For large fires, all employees should evacuate the area and personnel should be assigned to appropriate areas to wait for and direct the fire trucks and other emergency vehicles as needed.

5.3 FACILITY EMERGENCY COORDINATOR RESPONSIBILITIES

In addition to General Response Tasks, the **facility emergency personnel** (refer to Section 7.1, INTERNAL ALERT PROCEDURE) coordinating the activities should complete the following:

1. Notify appropriate MPC personnel as indicated in Section 7.1, INTERNAL ALERT PROCEDURES.

2. Assess any release that there may be. Existing sources of information such as waste analyses, waste manifests, and operating records can be used. This assessment should identify:
   a. Character of waste;
   b. Exact source of release;
   c. Amount of release; and
   d. Extent of release.

3. Assess possible hazards to human health and the surrounding environment.
   a. Direct effects; and
   b. Indirect effects (gases given off, surface water runoff).

4. Contact site emergency support personnel for recovery, clean-up, and decontamination of the site in the event of a small, easily controlled spill. For larger spills, an off-site approved waste hauler (refer to Section 6.2, APPROVED WASTE HAULERS FOR EMERGENCY CONTAINMENT AND CLEAN-UP) may need to be contacted. The Facility Emergency Coordinator and the MPC personnel should also assist site emergency support personnel with selection of appropriate personal protective equipment.

5. Supervise recovery, clean-up, decontamination, and labeling of waste containers according to applicable EPA and DOT regulations on hazardous materials.

6. Coordinate short-term storage and disposal of clean-up material (e.g., contaminated soil or surface water, recovered waste) immediately after the emergency. All waste material resulting from emergency clean-up shall be properly characterized and authorization from a licensed disposal facility shall be obtained prior to disposal.

7. Notify appropriate authorities if health or environment are threatened outside of the facility (refer to Section 7.2, EXTERNAL ALERT PROCEDURES). Evaluate if spill has entered storm sewer system, sanitary sewer system, or a surface water, and notify appropriate authorities as required.

8. Notify City of Battle Creek Fire Department if the emergency is a fire or explosion. The facility emergency coordinator will assign an individual to wait at the driveway entrance to direct emergency response authorities.

9. Notify appropriate authorities if release is equal to or greater than reportable quantity for the material (refer to Section 7.3, REQUIRED REPORTING).

10. Notify Battle Creek Area Wastewater Treatment Plant, Pollution Control in the event of an accidental or slug discharge, upset, or unanticipated bypass to the sanitary sewer (refer to Section 7.3, REQUIRED REPORTING).

11. Take all reasonable measures to stop recurrence or spread of emergency. These measures may include stopping processes and operations, collecting and containing released waste, and removing or isolating containers. As necessary, monitor for leaks, pressure build-ups, and other potential problems if the process is stopped.

12. Decontaminate the affected spill area and emergency response equipment to the extent necessary prior to resuming operations. All emergency equipment must be cleaned, replaced, or otherwise made fit for its intended used before operations resume.

13. In the event of major emergency situations and before resuming operations, notify MPC personnel as indicated in Section 7.1, INTERNAL ALERT PROCEDURES. Notification of the U.S. EPA, MDEQ, and local authorities may be necessary.

14. Prepare an operating record outlining events during emergency response, etc. and submit a report to the MDEQ within ten (10) days following clean up for any release requiring implementation of this SPCC/PIPP/SWP3 (refer to Section 7.3, REQUIRED REPORTING).

15. Prepare and submit a report to Battle Creek Area Wastewater Treatment Plant, Pollution Control within five (5) days following an accidental or slug discharge, upset, or unanticipated bypass to the sanitary sewer system (refer to Section 7.3, REQUIRED REPORTING).

6.0 EMERGENCY EQUIPMENT

6.1 ON-SITE EQUIPMENT

On-site spill control equipment consists of brooms, shovels, and mops. This equipment is stored at various locations throughout the plant and available for spill control at any time. Absorbent materials, such as oil dry, are also kept on hand for spills on nonporous surfaces. Personal Protective Equipment (PPE) that is kept on hand includes protective clothing, gloves, and boots. This equipment is to be used when conditions warrant and/or when specifically indicated on a Material Safety Data Sheet (MSDS).

6.2 APPROVED WASTE HAULERS FOR EMERGENCY CONTAINMENT AND CLEANUP

In cases where a spill has not been contained within the secondary containment area of the facility or by other means, and there exists the chance that the polluting materials will spill, discharge, run off, or leak into the natural resources of the State, immediate action should be taken to notify one of the following or another qualified firm to assist in emergency containment and clean-up operations:

1. **K & D Industries West, Inc.** **[November 1996]**
   2109 Olmstead Road
   Kalamazoo, Michigan 49003
   616-343-0088
   MID072790710

2. **Terra Environmental Corporation** **[November 1996]**
   5100 West Michigan Avenue
   Kalamazoo, Michigan 49007
   1-800-632-4176 (24-hour)
   MID017167222

EMERGENCY SPILL NOTIFICATION LIST

In the event of a chemical or material spill, one of the following individuals should be contacted immediately and in the order listed, and act as a **facility emergency coordinator:**

1. James Hosking
   Assistant Technical Superintendent
   269-963-4004 - Office Ext. 277
   269-417-1446 - Pager

2. Chad Longcore
   Technical Superintendent
   269-963-4004 - Office Ext. 205
   269-417-1789 - Pager

3. Laurie Bradley
   Safety Manager
   269-963-4004 - Office Ext. 217
   269-417-1437 - Pager

4. Don Royster
   Plant Engineer
   269-963-4004 - Office Ext. 269
   269-417-1665 - Pager

5. Ron Fox
   Operations Manager
   269-963-4004 - Office Ext. 221
   269-417-1529 - Pager

6. Chris Eaton
   General Superintendent
   269-963-4004 - Office Ext. 256
   269-417-1613 - Pager

7. Mark Reed
   General Manager
   269-963-4004 - Office Ext. 201
   269-417-1793 - Pager

8. Dawn McDonald
   Human Resources Director
   269-963-4004 - Office Ext. 226
   269-417-1750 - Pager

7.0 EMERGENCY SPILL NOTIFICATION LIST

7.1 INTERNAL ALERT PROCEDURES

In the event of a chemical or material spill, one of the following individuals should be contacted immediately and in the order listed, and act as a **facility emergency coordinator:**

1. James Hosking
   Assistant Technical Superintendent
   616-963-4004 - Office

2. **Michael Scholly** **[November 1996]**
   Technical Superintendent
   616-963-4004 - Office

3. **Dave McDaniel** **[November 1996]**
   Safety Manager
   616-963-4004 - Office
   616-968-7010 - Pager Number (Nights, Weekends and Holidays)

4. **Harry Snyder** **[November 1996]**
   Plant Engineer
   616-963-4004 - Office
   616-332-6736 - Pager Number (Nights, Weekends and Holidays)

5. **Ron Fox** **[November 1996]**
   Operation Manager
   616-963-4004 - Office
   616-968-7565 - Pager Number (Nights, Weekends and Holidays)

6. Charles Tobey
   Mill Superintendent
   616-963-4004 - Office

7. John Goll
   President
   616-963-4004 - Office
   616-966-8227 - Pager Number (Nights, Weekends & Holidays)

8. **Jim Minick** **[November 1996]**
   Human Resources Manager
   616-963-4004 - Office
   616-966-4872 - Pager Number (Nights, Weekends and Holidays)

NOTE: At nights and on weekends, the office number will not be answered. If someone must contact the MPC facility at these times, please use the following numbers:

Mill Office	616-963-4030
Power Plant	616-963-4043
Mill Control Room:	616-963-4263

The emergency coordinators are authorized to commit the necessary resources in the event of an emergency and at least one coordinator is always on-site or can reach the facility on short notice during an emergency. The above individuals also serve as the facility's representatives in charge of spill prevention and control and have prime responsibility for supplementing and complying with this Plan [November 1996].

7.2 EXTERNAL ALERT PROCEDURES

Notification of the following agencies will only be done when deemed necessary by one of the facility emergency coordinators:

7.2.1 Local Protection Agencies

If danger to public health or safety exists, immediately notify the following:

Calhoun County Sheriff:	**911 [November 1996]**
City of Battle Creek Fire Department:	911 - Emergency only 616-966-3519 (Chief's Office)

7.2.2 Battle Creek Area Wastewater Treatment Plant

In the event that a chemical spill is discharged into the City sanitary sewer system, immediately notify the following [November 1996]:

City of Battle Creek Wastewater Treatment Plant: (616) 966-3513 - Regular Business Hours
(616) 966-3493 - Nights, Weekends and Holidays

7.2.3 **Michigan Department of Environmental Quality (MDEQ) [November 1996]**

In the event of a chemical spill into drainage ditches or onto the ground outside the facility, in an amount greater than the CERCLA reportable quantity, or any quantity of oil or Critical Material (refer to Table 2), notify the MDEQ Water Quality Division in Jackson, Michigan at the following number:

MDEQ Jackson Office: (517) 780-7900

If unable to contact the Jackson office, notify the MDEQ at the following 24-Hour MDEQ Pollution Emergency Alert System (PEAS) Number:

24-Hour MDEQ Number (PEAS): 1-800-292-4706

For additional MDEQ reporting requirements, refer to Section 7.3, REQUIRED REPORTING.

7.2.4 Other Emergency Response Agencies

CHEMTREC (for chemical emergency - see following page):	1-800-424-9300
U.S. EPA National Response Center:	1-800-424-8802
Poison Control Center:	1-800-632-2727
Battle Creek Health System:	**616-966-8000 [November 1996]**
Battle Creek Civil Defense:	**616-966-3360 [November 1996]**

7.3 REQUIRED REPORTING

Under certain circumstances, various Federal and State regulations require reporting of spills of certain substances to specified agencies. Table 2 indicates the products currently utilized by

MPC containing substances which may be subject to spill reporting requirements. Table 2 provides the following information:

Column 1	Product Name.
Column 2	Primary Basis for Regulatory Listing. Substance(s) in the product which are potentially subject to Federal and/or State spill reporting requirements.
Column 3	Extremely Hazardous Substance (Yes/No). Product contains a substance listed in 40 CFR 355 as an Extremely Hazardous Substance (EHS).
Column 4	CERCLA Hazardous Substance (Yes/No). Product contains a substance listed in 40 CFR 302.4 on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substance list.
Column 5	Michigan Critical Materials Register (Yes/No). Product contains a substance listed on the Michigan Critical Materials Register.
Column 6	Reportable Quantity. Spill notification to certain agencies may be required if an amount equal to or greater than the reportable quantity is released outside the plant within a 24-hour period. Reportable quantities are given both in pounds and in gallons (figure in parentheses).

A summary of notification requirements is provided in a flowchart in the front of this plan [November 1996]. Reporting a spill to one or more of the following agencies may be required:

1. Local Emergency Planning Committee/State Emergency Response Commission (LEPC/SERC)
2. **Michigan Department of Environmental Quality (MDEQ) [November 1996]**
3. U.S. Environmental Protection Agency (U.S. EPA - Region V)
4. National Response Center (NRC)
5. Battle Creek Area Wastewater Treatment Plant, Pollution Control

Specific reporting requirements for each agency are as follows.

CHEMTREC CMA USERS' GUIDELINES

CHEMTREC is designed to give information and assistance in chemical and hazardous material emergencies. There are two phases of assistance:

1. Immediate advice on the nature of the product and emergency steps in a problem's early stages.
2. More detailed information and technical advice, including on-scene assistance (if necessary) obtained from the shipper of the material.

YOU MUST PROVIDE CHEMTREC WITH THE FOLLOWING INFORMATION FOR IT TO HELP YOU:

1. Name of the Product
2. Nature of the Problem

IF YOU NEED ADDITIONAL HELP, OR YOU CANNOT IDENTIFY THE PRODUCT, ATTEMPT TO GET AS MUCH AS POSSIBLE OF THE FOLLOWING INFORMATION:

1. Name of caller and call back number
2. Location of problem
3. Shipper or manufacturer
4. Container type
5. Rail car or truck number
6. Carrier name
7. Consignee
8. Local conditions

REMEMBER: "LIMIT CALLS TO EMERGENCIES ONLY. DO NOT TIE UP THE LINE UNNECESSARILY. THE NEXT COULD BE A TRUE EMERGENCY."

CHEMTREC is a public service of the:

Chemical Manufacturers Association
2501 M Street, Northwest
Washington, DC 20037

The panel below is designed to be photocopied and posted. The box containing the principal message can be cut out to fit in drivers' or response personnel's wallets.

FOR CHEMICAL EMERGENCY
SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT
CALL CHEMTREC -- DAY OR NIGHT
800-424-9300

Toll-free in the Continental U.S.
Add long-distance access number if required
For calls originating outside the Continental U.S.
202-483-7616 - Washington DC, Collect

ALL CALLS ARE RECORDED

TABLE 2

REGULATORY INFORMATION SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRIMARY BASIS FOR REGULATORY LISTING	EXTREMELY HAZARDOUS SUBSTANCE (YES/NO)	CERCLA HAZARDOUS SUBSTANCE (YES/NO)	MICHIGAN CRITICAL MATERIALS REGISTER (YES/NO)	REPORTABLE QUANTITY pounds (gallons)
No. 6 Fuel Oil	Petroleum residual (50-80%)	YES (Hydrogen Sulfide)	YES	YES	1,000,000 lbs. (127,557 gallons) Based on Hydrogen Sulfide*
	Distillate fuel (10-30%)				
	Hydrogen Sulfide (<0.01%)				
	Clarified oil (0-10%)				
Latex RES 3103	Acrylic copolymer (49-51%)	YES (Vinyl acetate)	YES	NO	1,052,631 lbs. (114,740 gallons)
	Vinyl acetate (<0.09%)				
	Acetaldehyde (<0.095%)				
	Acrylic monomers (<0.1%)				
	Water (49-51%)				
Ti-Pure RPS Vantage	Titanium dioxide (97.5-99.9%)	NO	NO	NO	N/A
	Aluminum hydroxide (0-1.2%)				
	Water (27.5-29.5%)				
Kaogloss #1 clay slurry	Hydrous aluminum silicate	NO	NO	NO	N/A
Kaobrite #2 clay slurry	Hydrous aluminum silicate	NO	NO	NO	N/A
Acrysol E-2961	Ammonium salt of acrylic polymer (10-12%)	NO	YES	NO	50,000 lbs. (5,450 gallons)
	Residual monomers (<0.1%)				
	Ammonia (0.2%)				
	Water (88-90%)				

TABLE 2

REGULATORY INFORMATION SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRIMARY BASIS FOR REGULATORY LISTING	EXTREMELY HAZARDOUS SUBSTANCE (YES/NO)	CERCLA HAZARDOUS SUBSTANCE (YES/NO)	MICHIGAN CRITICAL MATERIALS REGISTER (YES/NO)	REPORTABLE QUANTITY pounds (gallons)
Paper Process - Nalco 7530	Ethoxylated alcohol (1-5%)	NO	NO	NO	N/A*
	Severely hydrotreated light distillate (20-40%)				
Hercon 75	N/A	NO	NO	NO	N/A
Sodium Chloride	Sodium Chloride	NO	NO	NO	N/A
Betz 6304 B	Sodium Hydroxide	NO	YES	NO	45,119 lbs. (5,000 gallons)
Opti-trol 4000	3-Methoxy propylamine	YES (Cyclohexlamine)	NO	NO	11.38 lbs. (1.4 gallons)
	Cyclohexylamine				
CW-1720	2,2-dibromo-3-nitrilopropion-amide (20%)	NO	NO	NO	N/A
Nalco 7569	N/A	NO	NO	NO	N/A
Nalco 7562	N/A	NO	NO	NO	N/A
Nalco 7647	5-Chloro-2-methyl-4-isothiazolin-3-one (1.15%)	NO	NO	NO	N/A
	2-Methyl-4-isothiazolin-3-one (0.35%)				
Nalco 7594	Acetic acid (1-5%)	NO	YES	NO	100,000 lbs. (11,363 gallons)
	Ethylene glycol monobutylether (20-40%)				
Nalco 7597	Nonionic surfactant (1-5%)	NO	YES	NO	10,000 lbs. (900 gallons)
	Potassium hydroxide (5-10%)				
	Sodium hydroxide (10-20%)				

TABLE 2

REGULATORY INFORMATION SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRIMARY BASIS FOR REGULATORY LISTING	EXTREMELY HAZARDOUS SUBSTANCE (YES/NO)	CERCLA HAZARDOUS SUBSTANCE (YES/NO)	MICHIGAN CRITICAL MATERIALS REGISTER (YES/NO)	REPORTABLE QUANTITY pounds (gallons)
Nalco 7627	N/A	NO	NO	NO	N/A
Grain Processing K570	Starch (88%)	NO	NO	NO	N/A
Elvanol 71-30	Vinyl Alcohol Polymers, Copolymers (0-99%)	NO	YES	NO	156,250 lbs.
	Methanol (<3.2%)				
	Sodium Acetate (<1.4%)				
	Process Aids (0-3%)				
Henkel Foamaster VF	Trade Secret (100%)	NO	NO	NO	N/A*
Henkel Foamaster DF-177-F	Trade Secret (100%)	NO	NO	NO	N/A
Sodium 15% Hypochlorite	Sodium Hypochlorite	NO	YES	NO	1,000 lbs. (99 gallons)
Drumond Q-V - ECTH	Hydrochloric Acid (25%)	NO	YES	NO	20,000 lbs. (2,134 gallons)
Liquid caustic soda	Sodium Hydroxide (96-100%)	NO	YES	NO	1,000 lbs. (56 gallons)
Betz KI - 2	Citric Acid	NO	NO	NO	N/A
Betz: Sulfite 3	Sodium Bisulfite (30-40%)	NO	YES	NO	4,069 lbs. (387 gallons)
Mississippi Lime Hydrated	Calcium Hydroxide	NO	NO	NO	N/A
Remosil	Magnesium Oxide	NO	NO	NO	N/A

TABLE 2

REGULATORY INFORMATION SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRIMARY BASIS FOR REGULATORY LISTING	EXTREMELY HAZARDOUS SUBSTANCE (YES/NO)	CERCLA HAZARDOUS SUBSTANCE (YES/NO)	MICHIGAN CRITICAL MATERIALS REGISTER (YES/NO)	REPORTABLE QUANTITY pounds (gallons)
Betz FS-22	Petroleum Distillate	NO	YES	YES	1,428 lbs. (189 gallons) Based on Naphthalene*
	Solvents				
	Hydrotreated Petroleum Distillate				
	Solvent Petroleum Distillate				
	Napthalene (3-7%)				
Betz FS-538	Mineral Oil	NO	NO	NO	N/A*
	Sulfonic Acids				
Betz 1100	N/A	NO	NO	NO	N/A
Betz Corrogen	Sodium Sulfite	NO	NO	NO	N/A
Hydrochloric Acid 2N	Hydrochloric Acid (5-10%)	NO	YES	NO	50,000 lbs. (5,549 gallons)
Betz Chelant	Trisodium Salt	NO	YES	NO	100,151 lbs. (9,202 gallons)
	Tetrasodium Salt				
	Sodium Hydroxide (<3%)				
Drumond Perpetrator	Petroleum Distillate (30-65%)	NO	YES	YES	20,000 lbs. (2,828 gallons) Based on xylene*
	Aromatic Naptha 150 (30-65%)				
	Propylene Glycol T-Butyl Ether (1-5%)				
	Dipentene (1-5%)				
	Xylene (1-5%)				
Mobil - Multi-purpose ATF	N/A	NO	NO	NO	N/A*
Mobil - DTE extra heavy	N/A	NO	NO	NO	N/A*

TABLE 2

REGULATORY INFORMATION SUMMARY

Michigan Paperboard Company
Battle Creek, Michigan

November 1996

PRODUCT NAME	PRIMARY BASIS FOR REGULATORY LISTING	EXTREMELY HAZARDOUS SUBSTANCE (YES/NO)	CERCLA HAZARDOUS SUBSTANCE (YES/NO)	MICHIGAN CRITICAL MATERIALS REGISTER (YES/NO)	REPORTABLE QUANTITY pounds (gallons)
Mobil - DTE heavy	N/A	NO	NO	NO	N/A*
Mobil - DTE 797	N/A	NO	NO	NO	N/A*
Kerosene	Kerosene (100%)	NO	NO	NO	N/A*
Betz AFS	N/A	NO	NO	NO	N/A*
Aeon 4000 Gardener Denver	Paraffinic Oil (>98%)	NO	NO	NO	N/A*
	Acrylic Polymer (<1%)				
	Organo-zinc additive (<1%)				

NOTES:

1. *Although oils have no designated reportable quantity under CERCLA, 40 CFR 112 and Part 31 of Michigan Act 451 (formerly Act 245) require the reporting of any oil spilled into the environment to the U.S. EPA Regional Administrator and the MDEQ.

2. The MDEQ must be notified immediately of any hazardous waste release due to a fire, explosion, or spill, which is a threat to human health or the environment, or has reached surface water or groundwater. The NRC must be notified immediately of any such hazardous waste release that could threaten human health outside the facility boundaries or has reached surface water.

7.3.1 Local Emergency Planning Committee/State Emergency Response Commission (LEPC/SERC)

Section 304 of Title III of the Superfund Amendments and Reauthorization Act of 1986 [(SARA) a.k.a. the Community Right-to-Know Act] requires, in part, the owner or operator of any facility at which a hazardous chemical is produced, used, or stored and at which there is a release outside the facility boundaries of a reportable quantity of any Extremely Hazardous Substance (EHS) or CERCLA Hazardous Substance to immediately notify the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission (SERC).

For each product, **if a spill occurs outside the plant within a 24-hour period in amounts equal to or greater than the reportable quantity,** the facility emergency coordinator must notify the following individuals:

Local Emergency Planning Committee (LEPC)
County of Calhoun Emergency Services
161 East Michigan
Battle Creek, Michigan 49017
(616) 969-6430

State Emergency Response Commission (SERC)
(In Michigan, notify SERC via MDEQ PEAS)
MDEQ (PEAS): 1-800-292-4706

The following information should be presented when notifying the LEPC and SERC:

a. Chemical name or identity of substance(s) involved in the release;
b. Identification of substance as an Extremely Hazardous Substance;
c. Location of release;
d. Estimation of the quantity of each substance released into the environment;
e. Time and duration of the release;
f. The medium or media into which the release occurred;
g. Any known or anticipated health risks or advice regarding medical attention associated with the emergency;
h. The proper precautions to take as a result of the release; and,
i. The name(s) and telephone number(s) of the person(s) to be contacted for further information.

As soon as practicable after a reported release occurs, the facility emergency coordinator, acting for the owner or operator, shall provide a written follow-up emergency notice to the LEPC and

SERC. The notice will set forth and update the original information given (as outlined above) as well as additional information with respect to:

a. Actions taken to respond to and contain the release;
b. Any known or anticipated health risks associated with the release; and,
c. Where applicable, advice regarding medical attention necessary for exposed individuals.

7.3.2 Michigan Department of Environmental Quality (MDEQ)

The MDEQ should also be notified of releases of substances included on the EHS and CERCLA lists equal to or greater than their reportable quantities (refer to Table 2), or of releases of any amount of oil or Critical Material:

MDEQ Pollution Emergency Alerting System (PEAS):
1-800-292-4706

Within ten (10) days following the incident, the facility emergency coordinator must submit a written report to the MDEQ and U.S. EPA Regional Administrator which must include the following information (preferably in the order listed):

a. Name, address, and telephone number of the owner or operator;
b. Name, address, and telephone number of the facility;
c. Date, time, and type of incident;
d. Location of incident;
e. Cause of incident;
f. Name and quantity of material(s) involved;
g. The extent of injuries, if any;
h. An assessment of actual or potential hazards to human health or the environment, where applicable; and,
i. Estimated quantity and disposition of recovered material that resulted from the incident.

Workplace releases which do not reach the environment (i.e., occur inside the plant) need not be reported.

7.3.3 U.S. Environmental Protection Agency (U.S. EPA) Region V

If a facility has discharged:

1. More than 1,000 U.S. gallons of oil in a single spill event; or

2. Oil in harmful quantities as defined in 40 CFR Part 110 in two spill events occurring within any 12 month period

into or upon the navigable waters of the United States or adjoining shorelines, the facility shall submit the following information to the U.S. EPA Regional Administrator within sixty (60) days:

a. Name of facility;
b. Name(s) of the owner or operator of the facility;
c. Location of facility;
d. Date and year of initial facility operation;
e. Maximum storage or handling capacity of the facility and normal daily throughput;
f. Description of the facility, including maps, flow diagrams, and topographical maps;
g. A complete copy of the SPCC Plan with amendments;
h. The cause(s) of such spill, including a failure analysis of system or sub-system in which the failure occurred;
i. The corrective actions and/or countermeasures taken, including an adequate description of equipment repairs and/or replacements;
j. Additional preventive measures taken or contemplated to minimize the possibility of recurrence; and,
k. Such other information as the Regional Administrator may reasonable require pertinent to the Plan or spill event.The U.S. EPA Regional Administrator for the MPC facility can be contacted at the following address and phone number:

U.S. Environmental Protection Agency - Region V
Emergency Response and Support Branch
Waste Management Division
77 W. Jackson Boulevard
Chicago, Illinois 60604
(312)-353-2318 (24-hour number)

7.3.4 National Response Center (Federal)

Any person, as soon as he/she has knowledge of any discharge of oil or CERCLA hazardous substance, **equal to or greater than the reportable quantity (refer to Table 2) outside of the facility**, shall immediately notify by telephone, radio telecommunication, or similar rapid means

of communication, the Duty Officer, National Response Center, U.S. Coast Guard, 400 Seventh Street S.W., Washington D.C. 20590, at the following number:

U.S. Coast Guard: 1-800-424-8802

The release must be reported within 24 hours and the following information should be reported to the U.S. Coast Guard in the order listed:

a. Name and telephone number of reporter;
b. Name and address of facility;
c. Time, duration, and type of incident (i.e., release, fire)
d. Name and quantity of material(s) involved, to the extent known;
e. An indication of whether the material involved has constituents on the Extremely Hazardous Substance (EHS) list;
f. The extent of injuries, if any;
g. The possible hazards to human health or the environment outside the facility; and,
h. The medium or media into which the release occurred.

Workplace releases which do not reach the environment need not be reported.

7.3.5 City of Battle Creek Wastewater Treatment Plant

In accordance with the City of Battle Creek's Industrial Pretreatment Program, the facility shall notify the City of Battle Creek Wastewater Treatment Plant under the following conditions:

1. Immediately upon any accidental or slug discharge to the sanitary sewer. Formal written notification shall be submitted to the City within five days of becoming aware of the occurrence and shall include:

    a. Date and time of the violation;
    b. Cause of the violation;
    c. Anticipated time the violation is expected to continue; and,
    d. The actions that are proposed to be taken to eliminate the violation from occurring again.

2. Within 24 hours of becoming aware of an upset or unanticipated bypass. Formal written notification must be submitted to the City within five days of becoming aware of the occurrence and shall include:

a. Period of noncompliance, including exact dates and times;
b. Description and the cause of the indirect discharge;
c. Anticipated time the violation is expected to continue; and,
d. The steps being taken and/or planned to reduce, eliminate, and prevent recurrence of the violation.

3. Upon the discharge of a substance with is considered a hazardous waste under 40 CFR 261. This notification is required within six months of the commencement of the discharge of the hazardous substance, or within six months of the listing date of the hazardous substance, whichever is later. Notification must also be given to the State and the regional U.S. EPA.

Notification of the Battle Creek Area Wastewater Treatment Plant can be directed to the following address:

City of Battle Creek Wastewater Treatment Plant
2000 River Road
Battle Creek, Michigan 49017 (616) 966-3513

7.4 ADDITIONAL ASSISTANCE

When a situation requires, the following person shall be contacted by the facility emergency coordinator to prepare manifests or to package wastes, label drums, etc.

Jim Hosking, Assistant Technical Superintendent
Residence: (616) 979-2296
Office: (616) 963-4004

The following persons may also be contacted to provide technical assistance in the event of a hazardous materials spill or incident.

Ronald R. Vriesman, P.E.
Dell Engineering, Inc.
Residence: (616) 399-1815
Office: (616) 399-3500

Carol D. Quinn, P.E.
Dell Engineering, Inc.
Residence: (616) 786-9686
Office: (616) 399-3500

8.0 PERSONNEL TRAINING PROGRAM

8.1 MICHIGAN PAPERBOARD TRAINING STANDARD

The MPC employees receive the following Spill Prevention and Emergency Response training on a periodic basis:

1. All employees have been informed of the information contained within the SPCC/PIPP/SWP3 and are familiar with the on-site locations of the SPCC/PIPP/SWP3.
2. Employees responsible for oil and chemical material handling are trained in the proper operation and maintenance of equipment to prevent the discharges of oil and other significant chemicals to the environment.
3. All employees are notified of changes to the SPCC/PIPP/SWP3.

8.2 ANNUAL PROGRAM REVIEW

As indicated in Section 8.1, training will be conducted annually unless otherwise directed by regulation. On an annual basis, the Facility Emergency Coordinator(s) will review this Plan and make changes as necessary. As changes are made, the Facility Emergency Coordinators will notify all persons having this Plan on file (see page vi, OFF-SITE PLAN DISTRIBUTION LIST) and inform them of the changes and/or will distribute updated copies of the Plan to them.

This Plan must be reviewed and immediately amended, if necessary, whenever:

1. Applicable regulations are revised;
2. The Plan fails in an emergency;
3. The facility changes--in its design, construction, operation, or other circumstances--in a way that materially increases the potential for fires, explosions, or releases of oil or chemical materials, or changes the response necessary in an emergency;
4. The list of emergency coordinators changes; or
5. The list of emergency equipment changes.

8.3 RECORDS

A record of all employee training of the MPC facility personnel will be maintained on the Training Record Form included in Appendix C. These records will be kept for a period of at least three (3) years after an employee has left the facility. Training records on current personnel will be kept at least until closure of the facility.

9.0 INVENTORY CONTROL PROCEDURES

Operators, the Assistant Technical Director, and Jim Hosking are responsible for ordering and maintaining inventory of all materials used at MPC. **The operators** conduct inventory control checks on all bulk storage tanks on a daily basis. Records are maintained on how many batches of latex are used on a daily basis and computer data and graphs follow the consumption of all other chemicals. Records are maintained of materials shipped and received on a daily basis. The inventory control procedures are very thorough and precise for they not only detect material losses, but also provide valuable data about the efficiency of the paperboard manufacturing process **[November 1996]**.

In the event of the detection of material loss, one of the above named individuals will investigate, thus preventing any potential slow leak or slow spill situation.

10.0 SPILL PREVENTION INSPECTION/MAINTENANCE PROCEDURES

10.1 PAST SPILL OCCURRENCES

There have been no reported spill occurrences at the MPC facility. However, in the event of a spill occurrence, a history will be recorded on the Spill History Report Form and kept on file in the office of one of the Facility Emergency Coordinators. A copy of this form is included in Appendix C. Spill occurrences will be evaluated and, as necessary, this Plan will be changed and the changes will be implemented with regard to standard operating procedures to avoid reoccurrences.

10.2 ROUTINE INSPECTIONS

The following routine inspections are conducted at this facility by appropriate personnel in an attempt to prevent potential spill occurrences and to ensure the adequate operation of equipment in a potential emergency situation:

1. Fire protection sprinkler system should be pressure-tested on a monthly basis to ensure adequated pressure is maintained in the system (refer to inspection form in Appendix C);
2. Fire extinguishers should be inspected monthly to ensure their proper working condition;
3. Operators inspect the physical condition of each storage tank on their daily morning rounds. The quantity in each tank is recorded and the structural integrity is checked. A brief visual inspection is completed to determine if a tank is leaking or has leaked since the previous inspection.
4. Employees in the power plant are required to make hourly inspections of their portion of the facility. During these inspections the polymer, defoamer and boiler additive storage tanks are inspected.
5. In the coating room, where the latex, clay slurry and titanium, dioxide storage tanks are located, an individual is always present and able to observe the storage tanks for leaks.
6. Daily inspections of the fuel oil storage room and tanks are conducted.

10.3 SEMI-ANNUAL INSPECTIONS

Semi-annual inspections of the facility by the Facility Emergency Coordinator(s) are performed in order to prevent spill occurrences. Any potential mechanical failures or other concerns are communicated to the appropriate MPC Facility Emergency Coordinator (see Section 7.1 INTERNAL ALERT PROCEDURES). The inspection includes a review of the following items:

1. Check if supply of spill absorbent materials and spill response equipment is adequate;
2. Check secondary containment structures for cracks/failures (No. 6 Fuel Oil, Opti-Trol 4000 AST, Betz 6304B Balanced Polymer AST, etc.);
3. Check all bulk storage tanks for evidence of corrosion, if appropriate;
4. Check aboveground piping for possible failures; and
5. Ensure sufficient lighting in storage areas.

The Pollution Incident Prevention Inspection Form included in Appendix C must be completed and kept on file as documentation of completed inspections and identification of persons involved, dates, and actions taken.

11.0 STORM WATER POLLUTION PREVENTION PLAN (SWP3)

June 1996

Michigan Paperboard Company (MPC) submitted a Notice of Intent to the Michigan Department of Environmental Quality (MDEQ) to request coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activity (General Permit) on August 5, 1994. MPC received from the MDEQ a Certificate of Coverage under the General Permit effective December 5, 1994 (refer to Appendix D for copies of the Certificate of Coverage, General Permit, and Storm Water Site Map).

One of the requirements of the General Permit is development of a Storm Water Pollution Prevention Plan (SWP3) within 18 months of the effective date of the Certificate of Coverage. This section is intended to meet the General Permit's requirements for an SWP3.

11.1 SITE STORM WATER DRAINAGE

Storm water associated with industrial activity which leaves the site discharges to the Kalamazoo River. A Site Location Map indicating the location of the facility and the Kalamazoo River is included in Appendix D. The Storm Water Site Map in Appendix D contains information required to be identified at the facility in accordance with Michigan's General Permit, Part I.B.5.a. Potential storm water pollutant sources are described in detail in the next section and are identified on the site map. In addition, the site map shows the location of the site storm sewer system and Outfalls 001 and 002.

Outfall 001 is a 24-inch storm sewer pipe on the southwest side of the MPC building. The storm water drainage area of Outfall 001 includes the bulk chemical and salt delivery area located north of the building at dock F-9, an enclosed dumpster located south of the building, three (3) cyclones located on the roof at the south side of the building and some building roof drainage. Non-contact cooling water is also discharged through Outfall 001. Outfall 001 discharges to the Kalamazoo River. Outfall 002 is a storm sewer pipe located south of the south employee parking lot. Outfall 002 discharges to the Kalamazoo River.

11.2 DESCRIPTION OF POTENTIAL STORM WATER POLLUTANT SOURCES

Industrial activities which have potential to be exposed to storm water which discharges to a surface water are described in detail in this section.

11.2.1 Bulk Chemical And Salt Delivery Area

A bulk chemical and salt delivery area is located on a paved surface on the north side of the building. Storm water discharge from this area is collected in a storm sewer catch basin which discharges through Outfall 001 to the Kalamazoo River.

11.2.2 Enclosed Dumpster

An enclosed dumpster is stored outside to the southwest of the MPC building. Storm water discharge from this area percolates into the ground.

11.2.3 Cyclones

Three (3) cyclones and lines transport paper scrap along the roof of the building. Storm water from this area discharges through the roof drains. Various roof drains discharge through Outfall 001 to the Kalamazoo River.

11.2.4 Open-Top Storage Dumpsters

Open-top storage dumpsters are located to the east of the building near Dock F-5. Storm water from this area discharges to trench drains which discharge to process water. The potential for storm water from this area to discharge to surface water is negligible.

11.2.5 General Storage Area

A general storage area for equipment, wood pallets, hoppers, and other miscellaneous materials is located at the south side of the Fountain Street asphalt parking lot. Storm water from the west portion of the general storage area is collected in storm sewer catch basins which discharge through Outfall 002 to the Kalamazoo River. Storm water from the east portion of the general storage area sheet flows over the asphalt and percolates into a low spot of unpaved ground east of the Fountain Street parking lot.

11.2.6 Storage Shed

Additional equipment and miscellaneous materials are stored in the storage shed located to the northeast of the Fountain Street parking lot. The shed has three (3) walls and is covered by a prefabricated metal roof. Storm water from this area sheet flows over the asphalt and percolates into a low spot of unpaved ground east of the Fountain Street parking lot.

11.2.7 Erodible Soils

Erodible soils are present in the area of the railroad tracks north of the building.

11.2.8 Significant Leaks or Spills

There have been no significant leaks or spills of hazardous materials that would affect storm water discharges at the MPC facility in the last three (3) years.

11.3 NON-STRUCTURAL CONTROLS

Non-structural controls are routine practices or procedures that can be implemented to minimize potential contact of industrial activities with storm water. Continued implementation of non-

structural control practices will minimize potential contamination of storm water discharges from the site. The following non-structural control practices will be implemented at MPC:

11.3.1 Good Housekeeping

Good housekeeping practices are intended to maintain a clean and orderly work environment and are generally common sense practices. When properly implemented, good housekeeping practices not only reduce the potential exposure of industrial materials to storm water, they should also minimize safety hazards to plant personnel. MPC uses good housekeeping practices to reduce the potential of storm water impact. Specific good housekeeping practices include:

1. Outside truck docks, loading areas, general storage areas and dumpster storage areas are sweeped on a monthly basis (weather permitting). Dry sweeping to clean up solids or waste materials is performed rather than hosing down an area with water.

2. Spilled materials are promptly cleaned up to prevent exposure to storm water.

3. Paper scrap and trash disposal is scheduled regularly to minimize exposure of waste materials to storm water.

4. Maintenance of equipment outside the building is avoided. Equipment washdown operations is done inside the building (prior to outside storage of the equipment) and any generated wastewater is properly disposed so that it is not discharged to the site storm sewer system or surface water.

5. Tank truck loading/unloading procedures included in Section 4.0 are implemented during delivery of materials.

11.3.2 Preventative Maintenance

Routine preventative maintenance is another best management practice which is implemented at MPC. Specific preventative maintenance practices include:

1. Inspect the outside truck docks, general storage area, loading areas, general storage areas and dumpsters on a semi-annual basis (or at the discretion of the environmental coordinator) to ensure that materials are stored in an orderly fashion and outside areas are being kept clean.

2. Inspect storm sewer catch basins on a semi-annual basis (or at the discretion of the environmental coordinator) and remove sediment and debris as needed.

3. Inspect building roof drains on a semi-annual basis (or at the discretion of the environmental coordinator) and remove debris as needed.

4. Inspect equipment used outside the building (forklifts, etc.) on a regular basis and maintain as necessary to determine conditions that could cause breakdowns, leaks, or failures that could result in discharge of pollutants to surface water.

5. Immediately contain and collect any spills for proper disposal to avoid discharge of pollutants to surface water.

11.3.3 Material Handling

All raw materials, intermediate, final, and waste products will be handled in a manner to minimize potential contact with storm water. When feasible, materials will be stored inside the building or storage shed.

11.3.4 Employee Training

Employee training is a key factor to successful implementation of this SWP3. When properly trained, personnel are better able to recognize situations that could lead to storm water contamination. Employees should be trained in the good housekeeping practices, preventative maintenance, and material handling procedures outlined in this section.

Employee training can occur at routine employee meetings or by simply speaking to the responsible employee on an individual basis to ensure that information has been communicated effectively. Employees should be encouraged to notify the site certified storm water operator if a particular situation is observed that could have an impact on storm water discharges from the site.

Employee training updates regarding this SWP3 will be scheduled on an annual basis.

11.3.5 Semi-Annual Inspections

The General Permit requires that a comprehensive inspection of equipment, plant areas, and structural pollution prevention and treatment controls be performed at least once every six months. At MPC, the certified storm water operators shall conduct these inspections on a semi-annual basis or at the discretion of the environmental coordinator and keep records of the inspections. The inspection report must identify any non-compliance with the SWP3 and the General Permit. If no incidence of non-compliance is noted, the report shall contain a certification statement that the facility is in compliance with the General Permit. Appendix D contains an inspection report form that MPC will use to keep record of these required inspections. Reports of these inspections shall be prepared and retained for at least three years, and should be maintained with this plan in Appendix D.

The semi-annual inspection should include a visual inspection of Outfalls 001 and 002 during dry weather for evidence of non-storm water discharges. Non-storm water discharges authorized by the General Permit include only the following:

1. Fire hydrant flushings;
2. Potable water line flushings;
3. Irrigation/ lawn watering;
4. Routine building wash down which does not use detergents or other compounds;
5. Pavement wash water where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used;
6. Air conditioning condensate;
7. Springs;
8. Uncontaminated ground water; or,
9. Foundations or footing drains where flows are not contaminated.

Any other non-storm water discharges that might be observed, including process water, non-contact cooling water, vehicle wash water, or sanitary wastewater, must be discontinued or have a separate NPDES permit. MPC has an NPDES permit for discharge of non-contact cooling water through Outfall 001.

11.3.6 Schedule for Compliance and Implementation of Non-Structural Controls

A schedule for compliance and implementation of non-structural controls is presented in Table 3. The schedule will be used to determine that inspections are up to date, non-structural controls are implemented as required, and the SWP3 is reviewed and revised as necessary.

11.4 STRUCTURAL CONTROLS

Various structural controls to minimize contamination of storm water discharges are currently in place at MPC. Equipment and other miscellaneous items are stored in a three-sided shed with an overhead roof. The storm sewer catch basin located within the F-9 loading dock area is covered with a rubber mat during chemical unloading. The dumpster located to the south of the

TABLE 3

SCHEDULE OF COMPLIANCE AND IMPLEMENTATION OF NON-STRUCTURAL CONTROLS

Michigan Paperboard Company
Battle Creek, Michigan

June 1996

TASK	RESPONSIBLE PARTY	FREQUENCY
Amend SWP3	Authorized Representative or Certified Storm Water Operators	Whenever a change at the facility affects exposure of significant materials to storm water or if a leak or spill occurs
Review and Update SWP3	Technical Superintendent	Once per year
Sweep Outside Truck Docks, Loading Areas, General Storage Area, and Dumpster Storage Areas	Area Superintendent	Once per month (weather permitting)
Schedule Pick-up of Paper Scrap and Trash	Area Superintendent	As needed
Drain fluids from equipment to be stored	Plant Engineer	Prior to outside storage
Inspect Outside Truck Docks, Loading Areas, General Storage Area, and Dumpster Storage Areas	Area Superintendent	Once per month
Inspect Storm Sewer Catch Basins and Remove Sediment/Debris as Needed	Certified Storm Water Operators	Twice per year
Inspect Building Roof Drains and Remove Debris as Needed	Plant Engineer	Twice per year
Inspect Equipment Used Outside the Building	Plant Engineer	As needed
Informal Employee Training	Area Superintendent	As needed
Formal Employee Training	Safety Director/ Training Specialist	Once per year
Inspections of Equipment, Plant Areas, and Structural Pollution Prevention and Treatment Controls (see Inspection Log in Appendix D)	Certified Storm Water Operator	Twice per year

building is enclosed. The trench drains near the open-top dumpsters on the east side of the building discharge to process water.

Additional structural controls may be required if implementation of non-structural controls presented in Section 10.3 are found to be inadequate to prevent violations of Michigan Water Quality Standards.

11.5 COMPLIANCE DEADLINES FOR GENERAL PERMIT

General Permit compliance deadlines specified in MPC's Certificate of Coverage are summarized in Table 4. MPC will begin implementation of the non-structural controls included in Section 11.3 upon the final development of this SWP3.

TABLE 4

COMPLIANCE DEADLINES FOR GENERAL PERMIT

Michigan Paperboard Company
Battle Creek, Michigan

June 1996

ACTION	DEADLINE	ACTION COMPLETED BY MPC
Apply for coverage under General Permit	—	Notice of Intent (NOI) submitted August 1994
MDEQ returns Certificate of Coverage to MPC	—	Effective Date December 5, 1994
Certification of Storm Water Operators	December 5, 1995	June 1995
Development of SWP3	June 5, 1996	June 5, 1996
Implement non-structural controls of SWP3	December 5, 1996	June 5, 1996
Implement structural controls	December 5, 1997	Not applicable at this time

11.6 PLAN REVIEW REVISIONS

In accordance with the General Permit, the SWP3 must be reviewed and its accuracy confirmed by MPC no later than 30 months after the effective date of the Certificate of Coverage, and annually thereafter. Based upon the review, the permittee shall amend the plan as needed to ensure continued compliance with the General Permit. The plan must be amended whenever changes at the facility increase or have the potential to increase the exposure of significant materials to storm water. Also, the plan must be amended if MPC or the District Supervisor of the MDEQ find the plan to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity.

11.7 SIGNATORY REQUIREMENTS

11.7.1 Certified Storm Water Operator No. 1

I certify that I have been licensed by the State of Michigan as a Certified Storm Water Operator for Industrial Sites (Classification Code A-1i) and have supervision over the implementation of Michigan Paperboard Company's Storm Water Pollution Prevention Plan (SWP3).

Signature: Jim Hosking

Name (Printed or Typed): Jim Hosking

Date: November 12, 1996

Certification Number: 1 02127

Certification Expiration: July 1, 2000

11.7.2 Certified Storm Water Operator No. 2

I certify that I have been licensed by the State of Michigan as a Certified Storm Water Operator for Industrial Sites (Classification Code A-1i) and have supervision over the implementation of Michigan Paperboard Company's Storm Water Pollution Prevention Plan (SWP3).

Signature: Michael F. Scholly

Name (Printed or Typed): Mike Scholly

Date: November 12, 1996

Certification Number: 102140

Certification Expiration: July 1, 2000

11.7.3 Authorized Representative Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Harry Snyder

Name (Printed or Typed): Harry Snyder

Title: Plant Engineer

Date: Nov. 15, 1996

APPENDIX A

• SITE PLAN/CHEMICAL MATERIAL STORAGE PLAN AND FUEL OIL STORAGE AREA PLAN •

BETZ FS-22	
BETZ FS-538	HH2
BETZ 1100	II2
BETZ CORROGEN	JJ2
HYDROCHLORIC ACID	KK2
BETZ CHELANT	LL2
DRUMOND PERPETRATOR	MM2
MOBIL – MULTI-PURPOSE ATF	NN2
MOBIL – DTE EXTRA HEAVY	OO2
MOBIL DTE HEAVY	PP2
MOBIL – DTE 797	QQ2
KEROSENE	RR2
BETZ AFS	MM2
AEON 4000 GARDENER DENVER	TT2

NOTE: NUMBER IN STORAGE LOCATION DESCRIPTION DESIGNATES FLOOR LEVEL OF STORAGE AS FOLLOWS:

1 INDICATES BASEMENT LEVEL
2 INDICATES GROUND FLOOR LEVEL
3 INDICATES SECOND FLOOR LEVEL
4 INDICATES THIRD FLOOR LEVEL
5 INDICATES FOURTH FLOOR LEVEL

REV	DATE	DESCRIPTION	BY	CHK

DELL ENGINEERING, INC.
Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263
PH 616/399-3500 FAX 616/399-3777

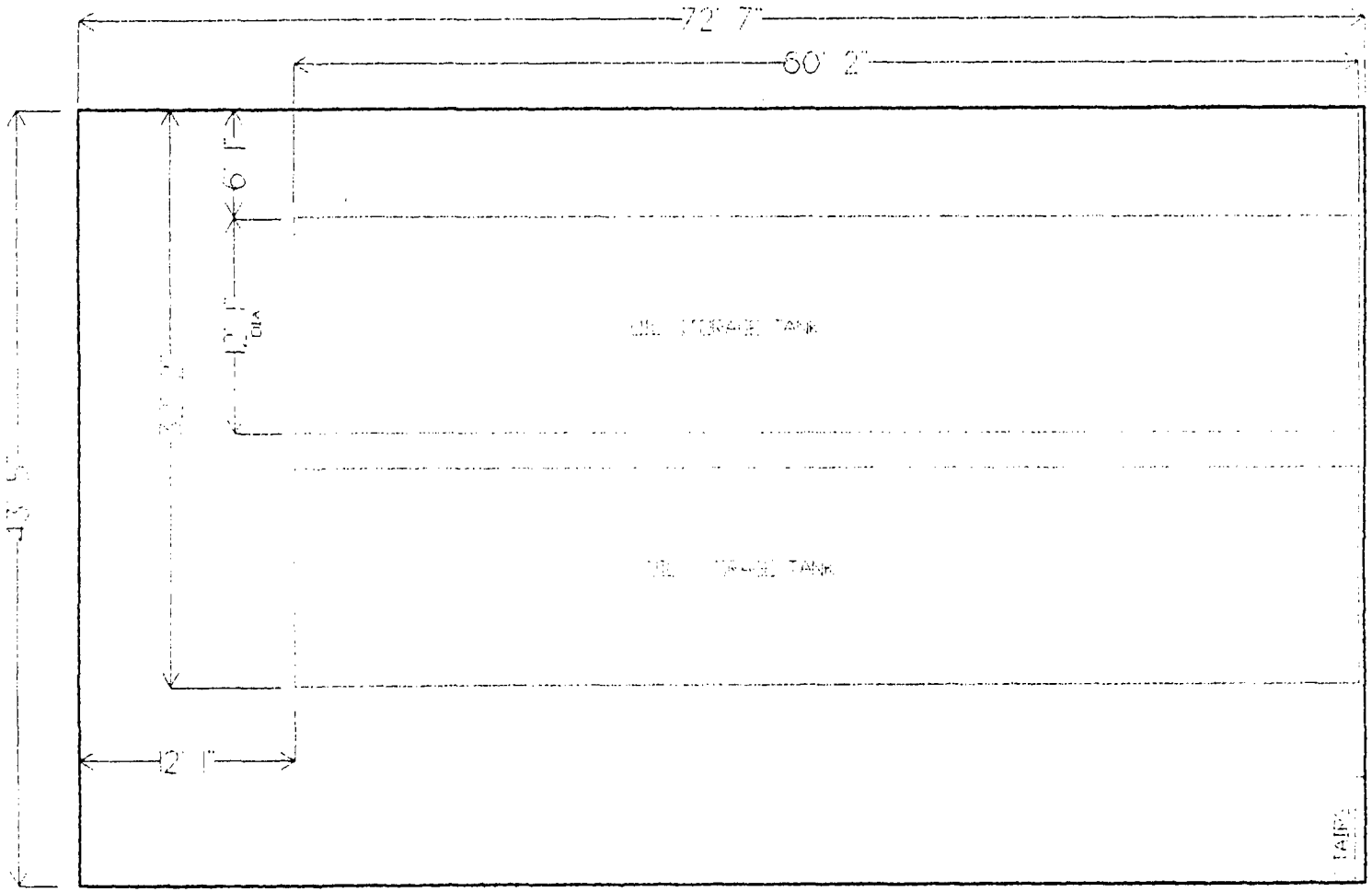
MICHIGAN PAPERBOARD CO.

79 EAST FOUNTAIN STREET
BATTLE CREEK, MICHIGAN

SCALE 1" = 50'	PROJECT NUMBER	DRAWN BY KLV
DATE 5/21/96	950426	CHECKED BY

SITE PLAN / CHEMICAL MATERIAL STORAGE PLAN

<G 950486> 50486W05 6/27/96



HEIGHT 12' 3"

S/M	REVISION	BY	DATE
△			
△			
△			
△			

MICHIGAN PAPERBOARD COMPANY
28 EAST FOUNTAIN STREET
BATTLE CREEK, MI 49018

FUEL OIL STORAGE AREA

DATE 28 07 96		DRAWING NO	REV
SCALE	CHKD		
DWN D. BUSCHINI	APPD		

APPENDIX B

• MATERIAL SAFETY DATA SHEETS •

Material Safety Data Sheets (MSDSs) included in Appendix B are as follows:

No. 6 Fuel Oil
Latex RES 3103
Ti-Pure RPS Vantage
Kaogloss #1 clay slurry
Kaobrite #2 clay slurry
Acrysol E-2961
Paper Process - Nalco 7530
Hercon 75
Sodium Chloride
Betz 6304 B
Opti-trol 4000
CW-1720
Nalco 7569
Nalco 7562
Nalco 7647
Nalco 7594
Nalco 7597
Nalco 7627
GPC K-570
Elvanol 71-30
Henkel Foamaster VF
Henkel Foamaster DF-177-F
Sodium 15% Hypochlorite
Drumond Q-V - ECTH
Liquid Caustic Soda
Betz KI - 2
Betz Sulfite 3
Mississippi Lime Hydrated
Remosil
Betz FS-22
Betz FS-538
Betz 1100
Betz Corrogen
Hydrochloric Acid 2N
Betz Chelant
Drumond Perpetrator
Mobil - Multi-purpose ATF
Mobil - DTE extra heavy
Mobil - DTE heavy
Mobil - DTE 797
Kerosene
Betz AFS
Aeon 4000 Gardener Denver

Marathon Oil Company

UCT NAME: **MARATHON NO. 6 FUEL OIL**
6 NO: **121MAR001**

THE FOLLOWING INFORMATION IS FURNISHED SUBJECT TO THE DISCLAIMER ON THE BOTTOM OF THIS FORM

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT
NAME: MARATHON NO. 6 FUEL OIL

SYNONYMS:
BUNKER C FUEL; MARATHON NO. 6 FUEL OIL; NO. 6 FUEL OIL, MARATHON; NO. 6 RESIDUAL FUEL

CHEMICAL FAMILY: PETROLEUM HYDROCARBON
CHEMICAL FORMULA: MIXTURE
PRODUCT CODE: NONE

MANUFACTURER / DISTRIBUTOR:
MARATHON OIL COMPANY
539 SOUTH MAIN STREET
FINDLAY, OH 45840

EMERGENCY PHONE NUMBERS:
(800) 424-9300
(419) 422-2121

MSDS INFORMATION: (419) 421-3070

MSDS REVISION DATE: 07/11/95

INFORMATION SUPPLIED BY: CRAIG M. PARKER
COORDINATOR, TOXICOLOGY AND PRODUCT SAFETY

2. COMPOSITION / INFORMATION ON INGREDIENTS

PRODUCT INFORMATION:

MARATHON NO. 6 FUEL OIL (CAS # MIXTURE) IS A/AN COMPLEX MIXTURE OF HIGH MOLECULAR WEIGHT HYDROCARBONS PRODUCED FROM HIGH TEMPERATURE TREATMENT OF HEAVY PETROLEUM FRACTIONS.

COMPONENTS:	PERCENT RANGE	CAS NUMBER
PETROLEUM RESIDUA (PREDOMINATELY HYDROCARBONS WITH CARBON NUMBERS >34 AND BOILING ABOVE 900 F)	50.00- 80.00	MIXTURE
MIDDLE DISTILLATE FUEL (PREDOMINANTLY C11 THROUGH C25 HYDROCARBONS BOILING FROM 401-752 F)	10.00- 30.00	64741-44-2
HYDROGEN SULFIDE	< 0.01	7783-06-4
CAT. CRACKED CLARIFIED OIL (PREDOMINANTLY HYDROCARBONS WITH CARBON NUMBER >20. MAY CONTAIN 15-40% 3-5 MEMBER CONDENSED RING POLYCYCLIC AROMATIC HYDROCARBONS)	0.00- 10.00	64741-62-4

EXPOSURE GUIDELINES	LIMIT	TYPE	SOURCE
PRODUCT:			
MARATHON NO. 6 FUEL OIL	NONE ESTABLISHED		
COMPONENTS:			
PETROLEUM RESIDUA	NONE ESTABLISHED		

PRODUCT NAME: **MARATHON NO. 6 FUEL OIL**
MSDS NO: **121MAR001**

2. COMPOSITION / INFORMATION ON INGREDIENTS (CON'T)

EXPOSURE GUIDELINES	LIMIT	TYPE	SOURCE
MIDDLE DISTILLATE FUEL	NONE ESTABLISHED		
HYDROGEN SULFIDE	10.00 PPM	8 HR TWA	ACGIH
	15.00 PPM	STEL	ACGIH
	10.00 PPM	8 HR TWA	OSHA
	15.00 PPM	STEL	OSHA
CAT. CRACKED CLARIFIED OIL	NONE ESTABLISHED		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

NO. 6 FUEL OIL IS A BLACK, VISCOUS, COMBUSTIBLE LIQUID.

DANGER!

COMBUSTIBLE LIQUID

LONG-TERM SKIN EXPOSURE HAS CAUSED SKIN CANCER IN LABORATORY ANIMALS

REPEATED SKIN CONTACT TO SOME COMPONENTS OF NO. 6 FUEL OIL HAS CAUSED SYSTEMIC TOXICITY (INCLUDING LIVER DAMAGE) IN LABORATORY ANIMALS

MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H_2S) GAS WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION

POTENTIAL HEALTH EFFECTS

EYE:

SHORT-TERM LIQUID OR VAPOR CONTACT MAY RESULT IN SLIGHT EYE IRRITATION.

SKIN:

PROLONGED AND REPEATED LIQUID CONTACT CAN CAUSE DERMATITIS, FOLLICULITIS, OIL ACNE OR SKIN TUMORS. COMPONENTS OF NO. 6 FUEL OIL MAY CAUSE SKIN SENSITIZATION. COMPONENTS OF NO. 6 FUEL OIL CAN CAUSE LIVER DAMAGE IF ABSORBED THROUGH THE SKIN.

INHALATION:

EXPOSURE TO VAPOR OR MIST MAY CAUSE PULMONARY IRRITATION, DIZZINESS, NAUSEA AND LOSS OF CONSCIOUSNESS. SEE SECTIONS 7 AND 11 REGARDING POTENTIAL HEALTH EFFECTS AND POSSIBLE ACCUMULATION OF HYDROGEN SULFIDE GAS.

3. HAZARDS IDENTIFICATION (CON'T)

INGESTION:

NO. 6 FUEL OIL IS PRESUMED TO HAVE A LOW ORDER OF ACUTE TOXICITY. SIGNIFICANT INGESTION OF SOME COMPONENTS OF NO. 6 FUEL OIL MAY CAUSE LIVER DAMAGE.

CARCINOGEN LISTING:

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAS DETERMINED THAT THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF UNTREATED VACUUM DISTILLATES, ACID-TREATED OILS, AND AROMATIC OILS, INCLUDING EXTRACTS FROM SOLVENT TREATMENT OF DISTILLATES AND THE HIGH BOILING FRACTION OF CATALYTICALLY CRACKED OILS IN ANIMALS.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

PREEXISTING SKIN CONDITIONS, RESPIRATORY DISORDERS, AND IMPAIRED LIVER FUNCTION MAY BE AGGRAVATED BY EXPOSURE TO COMPONENTS OF NO. 6 FUEL OIL.

4. FIRST AID MEASURES

EYE:

FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. IF SYMPTOMS OR IRRITATION OCCUR, CALL A PHYSICIAN.

SKIN:

WASH WITH SOAP AND LARGE AMOUNTS OF WATER. REMOVE CONTAMINATED CLOTHING. IF SYMPTOMS OR IRRITATION OCCUR, CALL A PHYSICIAN.

INHALATION:

MOVE PERSON TO FRESH AIR. IF NOT BREATHING OR NO HEARTBEAT, GIVE ARTIFICIAL RESPIRATION OR CARDIOPULMONARY RESUSCITATION (CPR). IMMEDIATELY CALL A PHYSICIAN. IF SYMPTOMS OR IRRITATION OCCUR WITH ANY EXPOSURE, CALL A PHYSICIAN.

INGESTION:

INGESTION NOT LIKELY. IF SWALLOWED, DO NOT INDUCE VOMITING AND DO NOT GIVE LIQUIDS. IMMEDIATELY CALL A PHYSICIAN.

4. FIRST AID MEASURES (CON'T)

NOTES TO PHYSICIAN:

NO DATA AVAILABLE.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: >150 (MIN) F
AUTOIGNITION TEMP: 765 F
EXPLOSIVE LIMITS (% BY VOLUME IN AIR)
LOWER: 1.0
UPPER: 6.0

FIRE AND EXPLOSION HAZARDS:

NO DATA AVAILABLE.

EXTINGUISHING MEDIA:

CLASS B FIRE EXTINGUISHING MEDIA SUCH AS HALON, CO2, OR DRY CHEMICAL CAN BE USED. FIRE FIGHTING SHOULD BE ATTEMPTED ONLY BY THOSE WHO ARE ADEQUATELY TRAINED.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

AVOID USE OF SOLID WATER STREAMS. WATER SPRAY AND FOAM MUST BE APPLIED CAREFULLY TO AVOID FROTHOVER. AVOID EXCESSIVE APPLICATION. USE WATER SPRAY TO COOL EXPOSED SURFACES.

6. ACCIDENTAL RELEASE MEASURES

KEEP PUBLIC AWAY. SHUT OFF SOURCE OF LEAK IF POSSIBLE TO DO SO WITHOUT HAZARD. ADVISE NATIONAL RESPONSE CENTER (800-424-8802) IF PRODUCT HAS ENTERED A WATERCOURSE. ADVISE LOCAL AND STATE EMERGENCY SERVICES AGENCIES, IF APPROPRIATE. CONTAIN LIQUID WITH SAND OR SOIL. RECOVER AND RETURN FREE LIQUID TO SOURCE. USE SUITABLE SORBENTS TO CLEAN UP RESIDUAL LIQUIDS.

7. HANDLING AND STORAGE

PRODUCT SHOULD BE HANDLED AND STORED IN ACCORDANCE WITH INDUSTRY ACCEPTED PRACTICES. COMPLY WITH ALL APPLICABLE OSHA, NFPA AND CONSISTENT LOCAL REQUIREMENTS. USE APPROPRIATE GROUNDING AND BONDING PRACTICES. STORE IN PROPERLY CLOSED CONTAINERS THAT ARE APPROPRIATELY LABELED.

HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H2S) GAS CAN BE GENERATED AND ACCUMULATE IN STORAGE TANKS AND BULK TRANSPORT COMPARTMENTS. STAY UPWIND AND VENT OPEN HATCHES BEFORE UNLOADING. DO NOT EXPOSE TO EXCESSIVE HEAT, OPEN FLAME OR OXIDIZERS. NO. 6 FUEL OIL MAY FLASH IF PRODUCT TEMPERATURE IS <150 F. AVOID SKIN CONTACT. EXERCISE GOOD PERSONAL HYGIENE, INCLUDING REMOVAL OF SOILED CLOTHING AND PROMPT WASHING WITH SOAP AND WATER.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS:

LOCAL OR GENERAL EXHAUST REQUIRED IN ENCLOSED AREAS OR WITH INADEQUATE VENTILATION.

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION:

NOT REQUIRED UNDER NORMAL CONDITIONS AND ADEQUATE VENTILATION. USE ATMOSPHERE SUPPLYING RESPIRATORS IN CONFINED SPACES OR WHEN HEATED MATERIAL PRODUCES VAPORS (INCLUDING H2S) THAT EXCEED PERMISSIBLE LIMITS OR EXCESSIVE VAPORS ARE GENERATED. SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED FOR FIRE FIGHTING.

SKIN PROTECTION:

IMPERMEABLE GLOVES (E.G., NITRILE, VITON, TYVEK/SARANEX 23) TO PREVENT SKIN CONTACT. USE CHEMICAL RESISTANT APRON OR OTHER PROTECTIVE CLOTHING TO AVOID SKIN CONTACT.

EYE PROTECTION:

GOGGLES AND FACESHIELD (HOT MATERIAL).

OTHER PROTECTIVE EQUIPMENT:

USE MECHANICAL VENTILATION EQUIPMENT THAT IS EXPLOSION-PROOF.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	550-1200 F
MELTING POINT:	NO DATA AVAILABLE
SPECIFIC GRAVITY (H2O=1):	0.88-0.99
PACKING DENSITY (KG/M3):	NO DATA AVAILABLE
% SOLUBILITY IN WATER:	NEGLIGIBLE
VAPOR DENSITY (AIR=1):	NO DATA AVAILABLE
VAPOR PRESSURE:	1 MM HG @ 160 F
PH INFORMATION:	NO DATA AVAILABLE
% VOLATILES BY VOL:	NO DATA AVAILABLE
EVAPORATION RATE:	NO DATA AVAILABLE
APPEARANCE:	BLACK VISCOUS LIQUID
ODOR:	HYDROCARBON
ODOR THRESHOLD (PPM):	NO DATA AVAILABLE

ADDITIONAL PROPERTIES:

NO DATA AVAILABLE.

10. STABILITY AND REACTIVITY

STABILITY:

THE MATERIAL IS STABLE AT 70 F, 760MM PRESSURE.

CONDITIONS TO AVOID:

EXCESSIVE HEAT, SOURCES OF IGNITION.

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE, HYDROGEN SULFIDE, ALDEHYDES, AROMATICS, OTHER HYDROCARBONS

INCOMPATIBLE MATERIALS:

STRONG OXIDIZERS.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

CONDITIONS TO AVOID:

NO DATA AVAILABLE.

ADDITIONAL COMMENTS:

NO DATA AVAILABLE.

11. TOXICOLOGICAL INFORMATION

LIFETIME SKIN PAINTING STUDIES IN ANIMALS WITH PRODUCTS SIMILAR TO NO. 6 FUEL OILS AND/OR ITS MAJOR COMPONENTS HAVE PRODUCED TUMORS IN ANIMALS FOLLOWING PROLONGED AND REPEATED SKIN CONTACT. REPEATED DERMAL APPLICATION HAS PRODUCED SEVERE IRRITATION AND SYSTEMIC TOXICITY IN SUBACUTE TOXICITY STUDIES. SOME COMPONENTS OF NO. 6 FUEL OIL, I.E., VACUUM RESIDUUM AND CATALYTICALLY CRACKED CLARIFIED OIL, WERE FOUND TO BE POSITIVE IN SOME MUTAGENICITY TESTS WHILE NEGATIVE IN OTHERS. THE EXACT RELATIONSHIP BETWEEN THESE RESULTS AND HUMAN HEALTH IS NOT KNOWN.

CATALYTIC CRACKED SLURRY OIL (CCSO) MAY BE PRESENT IN CONCENTRATIONS UP TO 10% IN NO. 6 FUEL OIL.

LIFETIME SKIN PAINTING STUDIES IN ANIMALS WITH CCSO HAVE PRODUCED TUMORS IN ANIMALS FOLLOWING PROLONGED AND REPEATED SKIN CONTACT. REPEATED DERMAL APPLICATION OF CCSO (30 MG/KG/DAY FOR 13 WEEKS) IN RATS RESULTED IN ANEMIA, LIVER DEGENERATION AND INJURY TO BONE MARROW AND LYMPHOID TISSUES. 100% MORTALITY WAS OBSERVED AT 2000 MG/KG/DAY WITHIN THREE WEEKS. REPEATED DERMAL APPLICATION (30 MG/KG/DAY) OF CCSO TO PREGNANT RATS DURING GESTATION PRODUCED MATERNAL AND FETAL TOXICITY. FEMALE RATS EXPERIENCED DECREASED FOOD CONSUMPTION AND BODY WEIGHT, SOME DEATHS AND SYSTEMIC TOXICITY (LIVER, THYMUS AND BLOOD). THE NUMBER OF FETAL RESORPTIONS/DEATHS WAS INCREASED AND THE NUMBER OF VIABLE OFFSPRING DECREASED AT DOSES OF 30 MG/KG/DAY AND ABOVE. MANY OF THE DEVELOPMENTAL EFFECTS (ANOMALIES, RESORPTIONS AND GROWTH INHIBITION) WERE OBSERVED AT DOSES WHICH PRODUCED MATERNAL TOXICITY. IN A SEPARATE DEVELOPMENTAL STUDY, CCSO PRODUCED DECREASES IN BODY WEIGHTS AND FOOD CONSUMPTION AT DOSES FROM 10-250 MG/KG/DAY. ALTHOUGH FERTILITY AND REPRODUCTIVE FUNCTION WERE NOT AFFECTED, THE NO OBSERVABLE ADVERSE EFFECT LEVEL FOR CCSO ADMINISTERED DERMALLY WAS 1 MG/KG/DAY.

HYDROGEN SULFIDE GAS (H_2S) IS TOXIC BY INHALATION. PROLONGED BREATHING OF 50-100 PPM H_2S VAPORS CAN PRODUCE EYE AND RESPIRATORY TRACT IRRITATION. HIGHER CONCENTRATIONS (250-600 PPM) FOR 15-30 MINUTES, CAN PRODUCE HEADACHE, DIZZINESS, NERVOUSNESS, NAUSEA AND PULMONARY EDEMA OR BRONCHIAL PNEUMONIA. CONCENTRATIONS OF >1000 PPM WILL CAUSE IMMEDIATE UNCONSCIOUSNESS AND DEATH THROUGH RESPIRATORY PARALYSIS.

12. ECOLOGICAL INFORMATION

NO. 6 FUEL OIL MAY BE TOXIC TO AQUATIC LIFE. THE 24-HOUR TLM OF THE WATER SOLUBLE FRACTION OF BUNKER C FUEL OIL IN MARINE AND ESTUARINE CRUSTACEANS AND FISH RANGED FROM 3-6 PPM.

13. DISPOSAL CONSIDERATIONS

DISPOSE OF CLEANUP MATERIALS IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

14. TRANSPORTATION INFORMATION

49 CFR 172.101:

PROPER SHIPPING NAME:	FUEL OIL, NO. 6
DOT CLASSIFICATION:	COMBUSTIBLE LIQUID
DOT IDENTIFICATION NUMBER:	NA 1993
PACKING GROUP:	PG III

REGULATED ONLY ON BULK SHIPMENTS.

15. REGULATORY INFORMATION

SARA TITLE III/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 - SECTIONS 302, 304, 311, 312 AND 313.

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES:

40 CFR PARTS 300 & 355 (52 FR 13378, 15412 - APRIL 28, 1987; 52 FR 48072 - DECEMBER 17, 1987; 53 FR 5574 - FEBRUARY 25, 1988).

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENT(S) IDENTIFIED ON APPENDIX A AND B OF THE EXTREMELY HAZARDOUS SUBSTANCE LIST:

---COMPONENT---	REPORTABLE ---QUANTITY (LBS)---	THRESHOLD PLANNING --- QUANTITY (LBS) ---
HYDROGEN SULFIDE	100	500

SECTION 304 - EMERGENCY RELEASE NOTIFICATIONS:

40 CFR PART 355 (52 FR 13378, 15412 - APRIL 28, 1987; 52 FR 48072 - DECEMBER 17, 1987; 53 FR 5574 - FEBRUARY 25, 1988).

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENT(S) IDENTIFIED EITHER AS AN EXTREMELY HAZARDOUS SUBSTANCE (SEE SECTION 302) OR A CERCLA HAZARDOUS SUBSTANCE 40 CFR 302 (51 FR 34547 - SEPTEMBER 29, 1988) WHICH IN CASE OF A SPILL OR RELEASE MAY BE SUBJECT TO REPORTING REQUIREMENTS UNDER SECTION 304 OF TITLE III:

HYDROGEN SULFIDE

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS:

40 CFR PART 370 (52 FR 38344 - OCTOBER 15, 1987).

DEPENDING ON LOCAL, STATE, AND FEDERAL REGULATIONS, MATERIAL SAFETY DATA SHEETS (MSDS'S) OR LISTS OF MSDS'S (PRODUCT NAMES) MAY BE REQUIRED TO BE SUBMITTED TO THE STATE EMERGENCY RESPONSE COMMISSION, LOCAL EMERGENCY PLANNING COMMITTEE, AND LOCAL FIRE DEPARTMENT IF YOU HAVE:

10,000 POUNDS OR MORE OF AN OSHA HAZARDOUS SUBSTANCE* OR
500 POUNDS OR THE THRESHOLD PLANNING QUANTITY WHICHEVER IS LESS, OF AN EXTREMELY HAZARDOUS SUBSTANCE.

* REPORTABLE QUANTITY LEVELS CAN VARY FROM STATE TO STATE AND YEAR TO YEAR DEPENDING ON APPLICABLE STATE AND/OR FEDERAL REGULATIONS.

THIS PRODUCT IS COVERED UNDER THE CRITERIA DEFINED IN OSHA'S HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 (52 FR 31852 - AUGUST 24, 1987) AND SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD CATEGORIES:

XX IMMEDIATE (ACUTE) HEALTH HAZARD
XX DELAYED (CHRONIC) HEALTH HAZARD
XX FIRE HAZARD
SUDDEN RELEASE OF PRESSURE HAZARD
REACTIVE HAZARD

PRODUCT NAME: MARATHON NO. 6 FUEL OIL
MSDS NO: 121MAR001

16. OTHER INFORMATION

NFPA CLASSIFICATION		HMIS CLASSIFICATION		HAZARD RATING
HEALTH:	2	HEALTH:	2	0 - LEAST
FIRE:	2	FIRE:	2	1 - SLIGHT
REACTIVITY:	1	REACTIVITY:	1	2 - MODERATE
OTHER:	-	PERSONAL PROTECTION:	-	3 - HIGH
				4 - EXTREME

COMMENTS:

NO DATA AVAILABLE.

*** DISCLAIMER ***

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS, TO THE BEST OF MARATHON OIL COMPANY'S KNOWLEDGE AND BELIEF, ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABLENESS AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

Rohm and Haas Company
Independence Mall West
Philadelphia, PA 19105

HEALTH EMERGENCY : 215-592-3000
SPILL EMERGENCY : 215-592-3000
CHEMTREC : 800-424-9300

MATERIAL SAFETY DATA SHEET

"Latex Binder"

PRODUCT IDENTIFICATION

RES 3103

Product Code	:	73260
Key	:	873333-8
MSDS Date	:	06/08/93
Supersedes	:	NEW

Rohm and Haas Hazard Rating		Scale
Toxicity	1	4 = EXTREME
Fire	0	3 = HIGH
Reactivity	0	2 = MODERATE
Special	-	1 = SLIGHT
		0 = INSIGNIFICANT

COMPONENT INFORMATION

No.		CAS REG NO.	AMT.(%)
+1	Vinyl acetate/acrylic copolymer	Not Hazardous	49-51
2	Vinyl acetate	108-05-4	< 0.09
-3	Acetaldehyde	75-07-0	< 0.095
4	Individual acrylic monomers	Not Required	< 0.1
5	Water	7732-18-5	49-51

EMERGENCY RESPONSE INFORMATION

FIRST AID PROCEDURES

Inhalation

Move subject to fresh air.

Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin Contact

Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

Ingestion

If swallowed, give 2 glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person.

FORM 10348 Recycled and Recyclable!

FIRE FIGHTING INFORMATION

Unusual Hazards

Material can splatter above 100C/212F. Dried product can burn.

Extinguishing Agents

Use extinguishing media appropriate for surrounding fire.

Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

SPILL OR LEAK HANDLING INFORMATION

Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See the PERSONAL PROTECTION MEASURES Section for recommendations. If exposed to material during clean-up operations, see the FIRST AID PROCEDURES Section for actions to follow.

Procedures

Keep spectators away. Floor may be slippery; use care to avoid falling. Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.
CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

HAZARD INFORMATION

HEALTH EFFECTS FROM OVEREXPOSURE

Primary Routes of Exposure

Inhalation
Skin Contact
Eye Contact

Inhalation

Inhalation of vapor or mist can cause the following:
- headache - nausea - irritation of nose, throat, and lungs

CONTINUED

CONTINUATION

Eye Contact

Direct contact with material can cause the following:
- slight irritation

Skin Contact

Prolonged or repeated skin contact can cause the following:
- slight skin irritation

FIRE AND EXPLOSIVE PROPERTIES

Flash Point	Noncombustible
Auto-ignition Temperature	Not Applicable
Lower Explosive Limit	Not Applicable
Upper Explosive Limit	Not Applicable

REACTIVITY INFORMATION

Instability

This material is considered stable. However, avoid temperatures above 177C/350F, the onset of polymer decomposition. Thermal decomposition is dependent on time and temperature.

Hazardous Decomposition Products

Thermal decomposition may yield the following:
- acrylic monomers - vinyl acetate monomer

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

There are no known materials which are incompatible with this product.

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ACCIDENT PREVENTION INFORMATION

COMPONENT EXPOSURE INFORMATION

Component Information

No.		CAS REG NO.	AMT.(%)
1	Vinyl acetate/acrylic copolymer	Not Hazardous	49-51
2	Vinyl acetate	108-05-4	< 0.09
3	Acetaldehyde	75-07-0	< 0.095
4	Individual acrylic monomers	Not Required	< 0.1
5	Water	7732-18-5	49-51

Exposure Limit Information

Component		ROHM AND HAAS		OSHA		ACGIH	
No.	Units	TWA	STEL	TWA	STEL	TLV	STEL
1		None	None	None	None	None	None
2	ppm	5	10	10	20	10	20
3	ppm	10	30	100	150	100	150
4		a	a	a	a	a	a
5		None	None	None	None	None	None

a Not Required

PERSONAL PROTECTION MEASURES

Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the TWA/TLV's listed in the COMPONENT EXPOSURE INFORMATION Section.

Up to 10 times the TWA/TLV: Wear a MSHA/NIOSH approved (or equivalent) full-facepiece, air-purifying respirator.

Up to 100 times the TWA/TLV or Unknown: Wear a MSHA/NIOSH approved (or equivalent) self-contained breathing apparatus in the positive pressure mode,
OR,
MSHA/NIOSH approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Air-purifying respirators should be equipped with organic vapor cartridges and dust and mist filters.

CONTINUED

CONTINUATION

Eye Protection

Use chemical splash goggles (ANSI Z87.1 or approved equivalent).

Hand Protection

The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection:
- Neoprene

FACILITY CONTROL MEASURES

Ventilation

Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility.

STORAGE AND HANDLING INFORMATION

Storage Conditions

Keep from freezing; material may coagulate. The minimum recommended storage temperature for this material is 1C/34F. The maximum recommended storage temperature for this material is 49C/120F.

Handling Procedures

Monomer vapors can be evolved when material is heated during processing operations. See FACILITY CONTROL MEASURES Section for types of ventilation required. This material contains residual levels of vinyl acetate monomer and acetaldehyde. Lack of adequate ventilation may result in airborne levels of vinyl acetate monomer and/or acetaldehyde above established exposure limits in the workplace. Monitoring the workplace to determine actual vinyl acetate/acetaldehyde levels is recommended.

SUPPLEMENTAL INFORMATION

TYPICAL PHYSICAL PROPERTIES

Appearance	Milky
Color	White
State	Liquid
Odor Characteristic	Vinyl acetate odor

CONTINUED

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CONTINUATION

pH	6.0 to 6.5
Viscosity	< 200 CPS
Specific Gravity (Water = 1)	1.0 to 1.2
Vapor Density (Air = 1)	< 1 Water
Vapor Pressure	17 mm Hg @ 20°C/68°F Water
Melting Point	0°C/32°F Water
Boiling Point	100°C/212°F Water
Solubility in Water	Dilutable
Percent Volatility	49 to 51 %
Evaporation Rate (BAc = 1)	< 1 Water

TOXICITY INFORMATION

Acute Data

The toxicity data listed are typical.
Oral LD50 - rat: >5000 mg/kg
Dermal LD50 - rabbit: >5000 mg/kg
Skin Irritation - rabbit: slight to moderate.
Eye Irritation - rabbit: slight to moderate.

Carcinogenicity Data

Vinyl acetate vapors were shown to cause tumors of the respiratory tract of laboratory rats and mice in lifetime inhalation studies at high exposure levels (2112 mg/m3).

WASTE DISPOSAL

Procedure

Coagulate the emulsion by the stepwise addition of ferric chloride and lime. Remove the clear supernatant and flush to a chemical sewer. Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

REGULATORY INFORMATION

WORKPLACE CLASSIFICATIONS

This product as supplied is non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200). Under processing conditions it may become OSHA hazardous due to the release and exposure potential of vinyl acetate and/or acetaldehyde (see Storage and Handling Information section for recommended handling procedures).

This product is not a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

TRANSPORTATION CLASSIFICATIONS

US DOT Hazard Class . . . . . NONREGULATED

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW (SARA TITLE 3)

Section 311/312 Categorizations (40CFR 370)

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Section 313 Information (40CFR 372)

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

CERCLA INFORMATION (40CFR 302.4)

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

RCRA INFORMATION

When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

CHEMICAL CONTROL LAW STATUS

All components of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

STATE RIGHT-TO-KNOW LAWS

Any material listed as "Not Hazardous" in the CAS REG NO column of the COMPONENT INFORMATION Section of this MSDS is trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

CALIFORNIA PROPOSITION 65

This product contains a component or components known to the state of California to cause cancer:
- Acetaldehyde (75-07-0)

ABBREVIATIONS:

ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
TLV = Threshold Limit Value
PEL = Permissible Exposure Limit
TWA = Time Weighted Average
STEL = Short-Term Exposure Limit
BAc = Butyl acetate
▌ Bar denotes a revision from previous MSDS in this area.

The information contained herein relates only to the specific material identified. Rohm and Haas Company believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. Rohm and Haas Company urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

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DuPont Chemicals

6200CR | Revised 23-NOV-1995 | Printed 4-DEC-1995

"Ti-Pure" RPS Vantage

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"TI-PURE" is a registered trademark of DuPont.

Corporate MSDS Number	DU004649
Formula	TiO2

Tradenames and Synonyms

"RPS Vantage" is a DuPont Trademark for its Rutile Paper Slurry.
TITANIA
TiO2
RUTILE
TITANIUM DIOXIDE

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information	1-800-441-9442
Transport Emergency	CHEMTREC: 1-800-424-9300
Medical Emergency	1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
TITANIUM DIOXIDE	13463-67-7	97.5-99.9
ALUMINUM HYDROXIDE	21645-51-2	0-1.2
WATER	7732-18-5	27.5-29.5

Components (Remarks)

% OF COMPONENTS ON DRY BASIS.

(Continued)

HAZARDS IDENTIFICATION

Potential Health Effects

Prolonged or repeated skin contact to titanium dioxide powder may cause drying and cracking of the skin in sensitive individuals.

Overexposure by inhalation of titanium dioxide may include mild and temporary upper respiratory irritation with cough and shortness of breath. Results of a DuPont epidemiology study showed that employees who had been exposed to titanium dioxide pigments were at no greater risk of developing lung cancer than were employees who had not been exposed to titanium dioxide pigments. No pulmonary fibrosis was found in any of the employees and no associations were observed between titanium dioxide pigment exposure and chronic respiratory disease or lung abnormalities. Based on the results of this study, DuPont concludes that titanium dioxide pigment will not cause lung cancer or chronic respiratory disease in humans at concentrations experienced in the workplace.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If the product is allowed to dry and large amounts of dust are inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable.

INGESTION

No specific intervention is indicated as the compound is not likely to be hazardous by ingestion. However, if symptoms occur, consult a physician.

(Continued)

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point	Will not burn
Flammable limits in Air, % by Volume	
LEL	Not applicable
UEL	Not applicable
Autoignition	Not applicable
Autodecomposition	Not applicable

Extinguishing Media

Any media as appropriate for combustibles in area.

Fire Fighting Instructions

None.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Accidental Release Measures

Flush to wastewater treatment plant or settling basin, or soak up with sand or other absorbant and shovel into covered metal container for disposal.

HANDLING AND STORAGE

Handling (Personnel)

If product is allowed to dry, avoid breathing dust. If exposure limits are exceeded for dried-down product, use a dust filter respirator (see Personal Protective Equipment).

Storage

Keep from freezing.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Good general ventilation should be provided to keep dust concentrations below the exposure limits.

Personal Protective Equipment

If exposure limits are exceeded for dust or dried-down product, NIOSH approved air purifying respirators equipped with particulate filters (properly fitted dust masks) should be used. Protective gloves should be worn to prevent prolonged skin contact with alkaline slurries. For dry product or dried-down product use a protective barrier cream and/or protective gloves to prevent skin contamination. Eye protection (minimum: safety glasses with side shields) is also required when handling titanium dioxide.

(Continued)

EXPOSURE CONTROLS/PERSONAL PROTECTION(Continued)

 # Exposure Guidelines

Applicable Exposure Limits

TITANIUM DIOXIDE

PEL	(OSHA)	15 mg/m3, total dust, 8 Hr. TWA
TLV	(ACGIH)	10 mg/m3, total dust, 8 Hr. TWA Notice of Intended Changes (1995-1996) A4
AEL *	(DuPont)	10 mg/m3, total dust, 8 Hr. TWA 5 mg/m3, respirable dust, 8 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point	100 C (212 F) @ 760 mm Hg
Vapor Pressure	Same as water (Liquid component is water.)
Vapor Density	Not applicable
Freezing Point	0 C (32 F)
Evaporation Rate	Not available
Solubility in Water	Solids are insoluble
pH	7.0-10.5
Odor	Slight amine
Form	Opaque dispersion, liquid
Color	White
Specific Gravity	1.8-2.4

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

Decomposition will not occur.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

"TI-PURE" Titanium Dioxide

Inhalation 4-hour ALC: >6,820 mg/m3 in rats (~96% TiO2)
Skin LD50 : >10,000 mg/m3 in rabbits
Oral LD50 : >24,000 mg/kg in rats

(Continued)

TOXICOLOGICAL INFORMATION(Continued)

The product contains titanium dioxide which is a mild skin irritant in animals.

In lifetime inhalation studies of respirable titanium dioxide at levels up to 250 mg/m3, no compound related clinical signs of toxicity were seen in the exposed animals. Slight pulmonary fibrosis was seen at 50 to 250 mg/m3 respirable titanium dioxide but not at 10 mg/m3. There was no evidence of cancer in animals exposed to 10 or 50 mg/m3 respirable titanium dioxide. Microscopic lung tumors were seen in 17 percent of the rats exposed to 250 mg/m3 respirable titanium dioxide. The lung tumors observed in the rats were different from common human lung cancers, relative to anatomic type and location, and occurred only at dust levels which overwhelmed the animals lung clearance mechanism and therefore, are of questionable biological relevance for man. In lifetime animal feeding tests at levels up to 50,000 ppm, titanium dioxide showed no evidence of cancer or other significant adverse effects in either rats or mice.

ECOLOGICAL INFORMATION

Ecotoxicological Information
Aquatic Toxicity

96-hour LC50, fathead minnows: >1,000 mg/L

DISPOSAL CONSIDERATIONS

Waste Disposal
Comply with Federal, State, and local regulations. If approved, remove to land disposal area.

TRANSPORTATION INFORMATION

Shipping Information
Shipping Containers

Tank Cars.
Tank Trucks.

NOT REGULATED AS A HAZARDOUS MATERIAL BY DOT OR IMO.

REGULATORY INFORMATION

U.S. Federal Regulations
TSCA Inventory Status Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

(Continued)

REGULATORY INFORMATION(Continued)

Acute : No
Chronic : No
Fire : No
Reactivity : No
Pressure : No

LISTS:

Extremely Hazardous Substance -No
CERCLA Hazardous Material -No
Toxic Chemical -No

CANADIAN WHMIS CLASSIFICATION:

Not regulated.

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating

Health	0
Flammability	0
Reactivity	0

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

Formaldehyde is present in solution in this product at levels typically less than 30 ppm caused by reaction of a proprietary constituent.

WARNING:

Formaldehyde (gas) is a substance known to the State of California to cause cancer.

For further information, see DuPont "Ti-Pure" Data Sheets.

CAUTION:

DO NOT USE IN MEDICAL APPLICATIONS INVOLVING PERMANENT IMPLANTATION IN THE HUMAN BODY.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS DuPont Chemicals
Address Engineering & Product Safety

(Continued)

	P. O. Box 80709, Chestnut Run Wilmington, DE 19880-0709
Telephone	302-999-4946

# Indicates updated section.

End of MSDS

FORM PC

MATERIAL SAFETY DATA SHEET

THIELE KAOLIN COMPANY
P. O. Box 1056
Kaolin Road
Sandersville, Georgia 31082

Name of Preparer: Sam J. Smith
Date Prepared: January 22, 1991
Revision Date: August 14, 1991
Telephone No.: 912-552-3951

SECTION I - MATERIAL IDENTIFICATION

Trade Name: Kaowhite, Kaofill, Kaogloss, Kaogloss 90, Kaobrite, Kaobrite 90, Kaofine, Kaofine 90, Kaokote HB

Chemical Identity, Common Names: Hydrous aluminum silicate; Kaolin

CAS Number: 1332-58-7

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Kaolin is classified as nuisance dust by the American Conference of Governmental Industrial Hygienist. ACGIH TLV-TWA 10 mg/m^3 total dust.

Kaolin is listed as an OSHA Air Contaminant. The respirable fraction of kaolin has an OSHA TWA of 5 mg/m^3.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Note: Kaolin is produced in a dry form and as an aqueous slurry. The information this section is characteristic of the dry form.

Boiling Point:	Solid	Specific Gravity (H2O = 1):	2.60
Vapor Pressure (mm Hg.):	Solid	Melting Point:	1735° C
Vapor Density (AIR = 1):	No Vapor	Evaporation Rate (Butyl Acetate = 1):	0
Solubility in Water:	Insoluble		
Appearance and Odor:	Off-white color, odorless		

SECTION IV - FIRE AND HAZARD DATA

Flash Point (Method Used): None Flammable Limits: None LEL: NONE UEL: NONE
Extinguishing Media: Not Applicable, will not burn
Special Fire Fighting Procedures: None
Unusual Fire and Explosion Hazards: None

SECTION V - REACTIVITY DATA

Stability: Stable

Incompatibility (Materials to Avoid): Not Reactive

Hazardous Decomposition or Byproducts: None

Hazardous Polymerization: Will not occur

FORM PC

SECTION VI - HEALTH HAZARD DATA

ROUTES OF ENTRY: Inhalation? Yes Skin? No Ingestion? No Hazard

HEALTH HAZARDS (ACUTE AND CHRONIC)

Acute: Dazomet (tetrahydro-3,4-dimethyl-2H-1,3,5-thiadiazine-2-thione)biocide used in some slurry shipments may cause lacrimation (temporary tearing of the eyes). Dazomet biocide theoretically could produce trace levels of formaldehyde. We have not been able to detect any formaldehyde in the kaolin slurry or in the air over the slurry.

Chronic: Long-term exposure to high levels of nuisance dust could cause a reduction in lung capacity.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	Not Listed	Not Listed	Not Listed

Signs and Symptoms of Exposure:
Exposure to slurry clay containing some biocides may cause lacrimation.

Medical Conditions Generally Aggravated by Exposure: None currently known.

Emergency and First Aid Procedures: Remove to fresh air, drink water to clear throat, blow nose, wash skin with soap and water, and flush eyes with water. No treatment for ingestion.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled:
Dry material can be scooped up, then wash area with water. Released or spilled slurry can be washed away with water.

Waste Disposal Method:
No special disposal method required.

Precautions to be taken in Handling and Storing:
Spilled material may cause slippery conditions when wet.

Other Precautions:
Should be kept from waste effluent to avoid high turbidity.

SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type):
Use MSHA/NIOSH or OSHA/NIOSH approved respirator if operating conditions cause heavy dusting.

Ventilation:	Local Exhaust	As needed to control dust	Special	No
	Mechanical (General)	As needed to control dust	Other	No

Protective Gloves: Not Required Eye Protection: Safety goggles for heavy dustir
Other Protective Clothing or Equipment: Not required
Work/Hygienic Practices: No special practice other than wash with soap and water.

Rohm and Haas Company
109 Independence Mall West
Philadelphia, PA 19106-2399

HEALTH EMERGENCY : 215-592-3000
SPILL EMERGENCY : 215-592-3000
CHEMTREC : 800-424-9300

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

ACRYSOL® E-2961 Thickener

Product Code	:	72710
Key	:	876097-7
MSDS Date	:	06/12/91
Supersedes	:	NEW

Rohm and Haas Hazard Rating		Scale
Toxicity	1	4=EXTREME 3=HIGH 2=MODERATE 1=SLIGHT 0=INSIGNIFICANT
Fire	0	
Reactivity	0	
Special	-	

COMPONENT INFORMATION

No.		CAS REG NO.	AMT.(%)
1	Ammonium salt of acrylic polymer . .	Not Hazardous	10-12
2	Individual residual monomers	Not Required	<0.1
3	Ammonia	7664-41-7	0.2 MAX.
4	Water	7732-18-5	88-90

See STORAGE AND HANDLING INFORMATION Section.

EMERGENCY RESPONSE INFORMATION

FIRST AID PROCEDURES

Inhalation

Move subject to fresh air.

Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin Contact

Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

Ingestion

If swallowed, give 2 glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person.

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FIRE FIGHTING INFORMATION

Unusual Hazards

Material can splatter above 100C/212F. Polymer film can burn.

Extinguishing Agents

Use extinguishing media appropriate for surrounding fire.

Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

SPILL OR LEAK HANDLING INFORMATION

Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See the **PERSONAL PROTECTION MEASURES** Section for recommendations. If exposed to material during clean-up operations, see the **FIRST AID PROCEDURES** Section for actions to follow.

Procedures

Keep spectators away. Floor may be slippery; use care to avoid falling. Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.
CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

HAZARD INFORMATION

HEALTH EFFECTS FROM OVEREXPOSURE

Primary Routes of Exposure

Inhalation
Skin Contact

Inhalation

Inhalation of vapor or mist can cause the following:
- headache - nausea - irritation of nose, throat, and lungs

CONTINUED

CONTINUATION

Eye Contact

Direct contact with material can cause the following:
- slight irritation

Skin Contact

Prolonged or repeated skin contact can cause the following:
- slight skin irritation

FIRE AND EXPLOSIVE PROPERTIES

Flash Point	*Noncombustible*
Auto-ignition Temperature	Not Applicable
Lower Explosive Limit	Not Applicable
Upper Explosive Limit	Not Applicable

REACTIVITY INFORMATION

Instability

This material is considered stable. However, avoid temperatures above 177C/350F, the onset of polymer decomposition. Thermal decomposition is dependent on time and temperature.

Hazardous Decomposition Products

Thermal decomposition may yield acrylic monomers.

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

There are no known materials which are incompatible with this product.

ACCIDENT PREVENTION INFORMATION

COMPONENT EXPOSURE INFORMATION

Component Information

No.		CAS REG NO.	AMT.(%)
1	Ammonium salt of acrylic polymer	Not Hazardous	10-12
2	Individual residual monomers	Not Required	<0.1
3	Ammonia	7664-41-7	0.2 MAX.
4	Water	7732-18-5	88-90

CONTINUE

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CONTINUATION

Exposure Limit Information

Component		ROHM AND HAAS		OSHA		ACGIH	
No.	Units	TWA	STEL	TWA	STEL	TLV	STEL
1		None	None	None	None	None	None
2		a	a	a	a	a	a
3	ppm	25	35	None	35	25	35
4		None	None	None	None	None	None

a Not Required

PERSONAL PROTECTION MEASURES

Respiratory Protection

None required if airborne concentrations are maintained below the TWA/TLV's listed in the **COMPONENT EXPOSURE INFORMATION** Section. For airborne concentrations up to 10 times the TWA/TLV's listed in the **COMPONENT EXPOSURE INFORMATION** Section wear a MSHA/NIOSH approved (or equivalent) half-mask, air-purifying respirator. Air-purifying respirators should be equipped with organic vapor cartridges.

Eye Protection

Use chemical splash goggles (ANSI Z87.1 or approved equivalent).

Hand Protection

The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection:
- Neoprene

FACILITY CONTROL MEASURES

Ventilation

Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (30 m/min.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility.

STORAGE AND HANDLING INFORMATION

Storage Conditions

Keep from freezing; material may coagulate. The minimum recommended storage temperature for this material is 1C/34F. The maximum recommended storage temperature for this material is 49C/120F.

Handling Procedures

Monomer vapors can be evolved when material is heated during processing operations. See **FACILITY CONTROL MEASURES** Section for types of ventilation required.
NOTE: Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above the Rohm and Haas Co. recommended TWA of 0.3 ppm and STEL of 0.6 ppm.

SUPPLEMENTAL INFORMATION

TYPICAL PHYSICAL PROPERTIES

Appearance	Hazy
Color	Colorless
State	Liquid
Odor Characteristic	Ammonia odor
pH	8.0-9.5
Viscosity	300-1000 CPS Maximum
Specific Gravity (Water = 1)	1.0-1.2
Vapor Density (Air = 1)	< 1 Water
Vapor Pressure	17 mm Hg @20°C/68°F Water
Melting Point	0°C/32°F Water
Boiling Point	100°C/212°F Water
Solubility in Water	Dilutable
Percent Volatility	88-90 % Water
Evaporation Rate (BAc = 1)	< 1 Water

TOXICITY INFORMATION

Acute Data

The information shown in the **HEALTH EFFECTS FROM OVEREXPOSURE** Section is based on toxicity profiles of similar materials or on the components present in this material.
Oral LD50 - rat: >5000 mg/kg
Dermal LD50 - rabbit: >2000 mg/kg
Eye irritation - rabbit: inconsequential irritation

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WASTE DISPOSAL

Procedure

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

REGULATORY INFORMATION

WORKPLACE CLASSIFICATIONS

This product is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is not a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

TRANSPORTATION CLASSIFICATIONS

US DOT Hazard Class . . . . . NONREGULATED

EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW (SARA TITLE 3)

Section 311/312 Categorizations (40CFR 370)

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Section 313 Information (40CFR 372)

This product does not contain a chemical which is listed in Section 313 above de minimis concentrations.

CERCLA INFORMATION (40CFR 302.4)

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

RCRA INFORMATION

When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

CHEMICAL CONTROL LAW STATUS

All components of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

STATE RIGHT-TO-KNOW LAWS

Any material listed as "Not Hazardous" in the CAS REG NO column of the **COMPONENT INFORMATION** Section of this MSDS is trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.
The following chemicals are listed because of the additional requirements of Pennsylvania law:
- Ethyl acrylate (140-88-5)

ACRYSOL® is a trademark of Rohm and Haas Company or one of its subsidiaries or affiliates.

ABBREVIATIONS:
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
TLV = Threshold Limit Value
PEL = Permissible Exposure Limit
TWA = Time Weighted Average
STEL = Short-Term Exposure Limit
BAc = Butyl acetate
▌ Bar denotes a revision from previous MSDS in this area.

The information contained herein relates only to the specific material identified. Rohm and Haas Company believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. Rohm and Haas Company urges persons receiving this information to make their own determination as to tha information's suitability and completeness for their particular application.

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MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT NALCO 7530 PAPER PROCESS

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7530 PAPER PROCESS
DESCRIPTION: An acrylamide modified cationic copolymer in a water and hydrocarbon solvent emulsion

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Ethoxylated alcohol	68439-50-9	1-5
Severely hydrotreated light distillate	64742-47-8	20-40

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Do not induce vomiting. Give water. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 5 HEALTH EFFECTS INFORMATION (CONTINUED)

EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: Can cause moderate irritation.
INGESTION: Can be harmful.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD_{50} = Greater than 5,000 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: 1.11/8.0

COMMENTS: An additional test of a 1% aqueous solution of similar product produced a primary irritation score of 0.06/8.0

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: 17.3/110.0

COMMENTS: An additional test of 1% aqueous solution of a similar product produced a primary eye score of 13.2/110.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Opaque white	FORM: Liquid	
DENSITY:	8.5 lbs/gal.	
SOLUBILITY IN WATER:	Partially	
SPECIFIC GRAVITY:	1.02 @ 72 Degrees F	ASTM D-1298
pH (NEAT) =	5.0	ASTM E-70
VISCOSITY:	420 cps @ 72 Degrees F	ASTM D-2983
FREEZE POINT:	1 Degree F	ASTM D-1177
BOILING POINT:	207 Degrees F	ASTM D-86
FLASH POINT:	Greater than 200 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 200 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid water contamination which may cause gelling.

Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO_2, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists or aerosols are generated, wear a NIOSH approved or equivalent respirator, (ANSI Z 88.2, 1980 for requirements and selection).

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.) when attaching feeding equipment or doing maintenance.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, (i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA: Results below based on a 1% solution of a similar product.

96 hour static acute LC_{50} to Rainbow Trout = Greater than 10 ppm, less than 100 ppm

48 hour static acute LC_{50} to Rainbow Trout = 100 ppm

24 hour static acute LC_{50} to Rainbow Trout = Greater than 10 ppm, less than 100 ppm

OTHER STUDIES:

96 hour LC_{50} Sheepshead minnow = Greater than 1,000 ppm

48 hour LC_{50} Daphnia magna = Greater than 100 ppm, less than 200 ppm

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Ethoxylated alcohol - Moderate eye irritant
Severely hydrotreated light distillate - Skin irritant

Severely hydrotreated light distillate = TWA 5 mg/m³ (oil mist) ACGIH/TLV

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients (at a level of 1% or greater) on the

SECTION 14 REGULATORY INFORMATION (CONTINUED)

List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA):
Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under 21 CFR 176.170

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
If this product becomes a waste, it does not meet the criteria of a hazardous waste.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
This product contains the following ingredient covered by the Clean Water Act:

Adipic acid - Section 311

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product contains the following ingredients covered by the Clean Air Act:

Adipic acid - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following states identify the ingredient(s) shown below as hazardous:

Massachusetts, New Jersey, Pennsylvania - Adipic acid

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill

SECTION 14 REGULATORY INFORMATION (CONTINUED)

C-70. The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Ethoxylated alcohol	68439-50-9	1-5
Severely hydrotreated light distillate	64742-47-8	20-40

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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SECTION 17 BIBLIOGRAPHY (CONTINUED)

eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OHSA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 03/14/90 DATE PRINTED: 04/28/90

HERCULES

MSDS NO.:	181 6114 0800	REV.:	04
ISSUE DATE:	12/03/93		
SUPERSEDES:	181 6114 0800	REV.:	03
	03/17/92		

Hercules Incorporated
Hercules Plaza
Wilmington, DE 19894-0001
(302) 594-5000 (24 hrs)

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **HERCON® 75 sizing emulsion**

APPEARANCE: liquid

COLOR: white

ODOR: odorless

CASRN: Mixture

CHEMICAL DESCRIPTION: sizing emulsion

HMIS RATINGS

Health hazard:	1 SLIGHT
Flammability hazard:	0 MINIMAL
Reactivity hazard:	0 MINIMAL

SECTION 2: HAZARDOUS COMPONENT INFORMATION

This product is not a health hazard according to the OSHA Hazard Communication Standard 29CFR1910.1200. The hazards identified for this product are based on pH.

ECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: *CAUTION!*

Prolonged or repeated contact may cause skin irritation. May cause mild, temporary eye irritation.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

SECTION 4: FIRST AID PROCEDURES

EYES:

Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Remove contact lenses. Get immediate medical attention.

SKIN:

Wash thoroughly with soap and water.

INGESTION:

No adverse health effects are expected from accidental ingestion of small amounts of this product.

SECTION 5: FIRE HAZARDS

FIRE FIGHTING PROCEDURES:

This material is an aqueous suspension and will not support combustion.

EXTINGUISHING MEDIA:

Water spray, dry chemical, foam, carbon dioxide or halon may be used on fires involving this product.

CONDITIONS TO AVOID:

None known.

HAZARDOUS COMBUSTION PRODUCTS:

If heated to decomposition, the following substances may be formed: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride, hydrogen cyanide and ammonia.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Flush with excess water to a wastewater treatment system.
For large spills, dike to contain and pump into drums for use or disposal.

In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

SECTION 7: HANDLING AND STORAGE

GENERAL MEASURES:

There are no unusual hazards associated with handling of this product.

MATERIALS OR CONDITIONS TO AVOID:

Avoid storing product near incompatible materials. See Section 10.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL HYGIENIC PRACTICES:

Avoid contact with eyes, skin, and clothing.
Wash thoroughly after handling, and before eating, drinking or smoking.

RECOMMENDED EXPOSURE LIMITS:

This product is not considered to present an inhalation health hazard under reasonably anticipated conditions of use.

PERSONAL PROTECTIVE EQUIPMENT:

Safety glasses
Impervious gloves

WORK PRACTICES AND ENGINEERING CONTROLS:

Eyewash fountains and safety showers should be easily accessible.

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE:

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH:	2.5-4.0	
Solids, %:	15	
Solubility in Water:	miscible with water	
Specific Gravity:	similar to water	
Vapor Pressure:	similar to water	
Vapor Density:	lighter than air	
Evaporation Rate:	similar to water	
Boiling Point:	210-212 ° F	99-100 ° C
Freezing Point:	32 ° F	0 ° C

SECTION 10: STABILITY AND REACTIVITY

GENERAL STABILITY CONSIDERATIONS:

Stable under recommended handling and storage conditions.

INCOMPATIBLE MATERIALS:

alcohols, alkalis and amines

HAZARDOUS POLYMERIZATION:

Not anticipated under normal or recommended handling and storage conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

REPORTED HUMAN EFFECTS:

No human toxicity studies have been carried out with this product.

REPORTED ANIMAL EFFECTS:

No animal toxicity studies have been carried out with this product.

CARCINOGENICITY INFORMATION:

Not listed as a carcinogen by NTP; Not regulated as a carcinogen by OSHA; and Not evaluated by IARC.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:

No ecological studies have been carried out on this product.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Incineration in accordance with applicable regulations is the recommended disposal method. Supplemental fuel may be required. Wastewater containing this product can be considered for treatment in an acclimated biological treatment system.

SECTION 14: TRANSPORTATION INFORMATION

For information regarding transportation of this product, please contact Hercules Transportation at (302) 594-7356.

SECTION 15: REGULATORY INFORMATION

CHEMICAL INVENTORIES:

U. S. TSCA Status: Included on TSCA inventory.

SARA TITLE III

Sections 302 and 304:

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

Sections 311 and 312:

HC-1: Acute health hazard
NPH: Not a physical hazard

Section 313:

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

CERCLA

This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

RCRA

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

SECTION 16: OTHER INFORMATION

LIST OF ACRONYMS:

ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level
C: Ceiling
CASRN: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Emergency Response and Civil Liberties Act
DSL: Domestic Substances List (Canadian)
EINECS: European Inventory of Existing Commercial Chemical Substances
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
MITI: Ministry of International Trade and Industry (Japanese)
N/A: Not Applicable
NDSL: Non-domestic Substances List (Canadian)
NOR: Not Otherwise Regulated
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: OSHA Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
RQ: Reportable Quantity
SARA: Superfund Amendment Reauthorization Act
STEL: Short-Term Exposure Limit
TLV: Threshold Limit Values (registered trademark of ACGIH)
TPQ: Threshold Planning Quantity
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average

..e information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with our products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

2/5/86
Doug

CARGILL SALT
LESLIE SALT CO.
A CARGILL COMPANY

PRODUCT SAFETY DATA SHEET

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)		C.A.S. NO.
Salt		7647-14-5
CHEMICAL NAME	**FORMULA**	**MOLECULAR WEIGHT**
Sodium Chloride	NaCl	58.4428

ADDRESS

Cargill Salt Division P.O. Box 5621 Minneapolis, MN 55440	Leslie Salt Co. P.O. Box 364 Newark, CA 94560

CONTACT	PHONE NUMBER	DATE ISSUED	DATE REVISED
National Technical Director	(612) 475-6581	8/1/85	Same

B. FIRST AID MEASURES

Skin: Wash with water.
Eyes: Irrigate with plenty of water.

EMERGENCY PHONE NUMBER
(612) 476-1127

C. HAZARDS INFORMATION HEALTH (Reference (a).)

INHALATION
Inhalation of product may cause mild irritation of nose and throat.

INGESTION
Ingestion of large amounts (greater than 0.1 pound) may cause gastro-intestinal upset.

SKIN
Dust may cause mild irritation.

EYES
Dust may cause irritation.

PERMISSIBLE CONCENTRATION

AIR	BIOLOGICAL
None established.	No TLV established.

UNUSUAL CHRONIC TOXICITY
None.

C. HAZARDS (Cont.) FIRE AND EXPLOSION

FLASH POINT °C	AUTOIGNITION TEMPERATURE °C	FLAMMABLE LIMITS IN AIR (% BY VOLUME)
Not flammable. ☐ OPEN CUP ☐ CLOSED CUP	NA	NA

D. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED NA
FIRE EXTINGUISHING AGENTS TO AVOID NA
SPECIAL FIRE FIGHTING PRECAUTIONS NA
VENTILATION Local exhaust if dusty conditions prevail.
NORMAL HANDLING Avoid eye contact or prolonged skin contact.
STORAGE Wet or damp conditions can cause caking and corrosion of metal contact surfaces.
SPILL OR LEAK Shovel up dry material into an empty container. Flush residue with water down local sewer.
SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS Store in cool, dry area. No special cautions or labeling are required.

E. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION When required, use a respirator approved by NIOSH for product dusts.
EYES AND FACE In extremely dusty areas, chemical safety goggles should be used.
HANDS, ARMS, AND BODY Wear long-sleeved shirts and trousers for routine product handling. Gloves are optional.
OTHER CLOTHING AND EQUIPMENT NA

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR
☐ LIQUID ☒ SOLID ☐ GAS ☐ _____	White crystalline solid. Slight saline odor.

BOILING POINT 1465°C MELTING POINT 800°C	SPECIFIC GRAVITY (H_2O = 1) 2.16	VAPOR DENSITY (AIR = 1) NA
SOLUBILITY IN WATER (% BY WEIGHT) 26.395 Max. at 60°F	pH (20% SOLUTION) 6.5 - 9.5	VAPOR PRESSURE (mm Hg at 20°C) 2.4mm at 746.9°C

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☒ STABLE ☐ UNSTABLE	Wet/damp conditions can cause caking and corrosion.

INCOMPATABILITY (MATERIALS TO AVOID)

None provided the product is dry.

HAZARDOUS DECOMPOSITION PRODUCTS

None.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	

H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT /C.A.S. NO.	WEIGHT %	HAZARD DATA (SEE SECTION J)

I. ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY Product is inorganic and may persist in the environment.	
EPA HAZARDOUS SUBSTANCE? ☐ YES ☒ NO IF SO, REPORTABLE QUANTITY: ———— #	40 CFR 116-117
WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS) Flush to sewer if permitted by applicable disposal regulations.	
RCRA STATUS OF UNUSED MATERIAL: Not a "hazardous waste".	40 CFR 261

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES		
REGULATORY STANDARDS	D.O.T. CLASSIFICATION: NA	49 CFR
FDA regulations apply to food use and USP/NF grades (21 CFR). USDA regulations apply to use in meat and poultry products.		
GENERAL (a) Recommendations of the Salt Institute.		

K. ADDITIONAL INFORMATION

This product is not for food or drug use unless material is labeled "food grade," "USP grade," or "NF grade," as applicable.

This product safety data sheet is offered solely for your information, consideration and investigation.

Cargill Salt Division/Leslie Salt Co. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

BETZ INDUSTRIAL DIV.
1 QUALITY WAY, TREVOSE, PA.19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) (800)877-1940
EFFECTIVE DATE 02-16-91

Product: BALANCED POLYMER 6304B PRINTED:
REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : WATER BASED INTERNAL BOILER TREATMENT CHEMICAL.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

SODIUM HYDROXIDE***(CAUSTIC SODA)***CAS#1310-73-2;CORROSIVE;TOXIC IF ORALLY INGESTED;PEL:2.0MG/M3;TLV:2.0MG/M3(CEILING).

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 13.3 ODOR: NONE
FL.PT.(DEG.F): 200 SETA(CC) SP.GR.(70F)OR DENSITY: 1.082
VAPOR PRESSURE(mmHG): 18 VAPOR DENSITY(AIR=1): 1
VISC cps70F: 20 %SOLUBILITY(WATER): 100
EVAP.RATE: 1 ETHER=1 APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID FREEZE POINT(DEG.F): 28.7

-----SECTION 3----------REACTIVITY DATA----------

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MODERATELY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED CONTACT MAY CAUSE PRIMARY IRRITANT DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

DO NOT FREEZE.IF FROZEN,THAW AND MIX COMPLETELY PRIOR TO USE

HANDLING INSTRUCTIONS***

ALKALINE.DO NOT MIX WITH ACIDIC MATERIAL.

****

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

GREATER THAN 5000 GALLONS OF 'AS IS' PRODUCT

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002=CORROSIVE (PH)

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ALK ; PE - B

BETZ
Trevose, PA 19053-6783 (215)355-3300

Material Safety Data Shee

Emergency Telephone
Health/Accident (800)877-1940

PRODUCT:OPTI-TROL 4000

EFFECTIVE DATE:09-16-93

REVISIONS TO SECTIONS: ;EDIT:2

PRODUCT APPLICATION:WATER BASED INTERNAL BOILER TREATMENT CHEMICAL.

1) HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS,HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

METHOXYPROPYLAMINE,3-***CAS# 5332-73-0;FLAMMABLE LIQUID;CORROSIVE; PEL:NOT DETERMINED;TLV:NOT DETERMINED

TRADE SECRET INGREDIENT(167);FLAMMABLE;CORROSIVE; PEL:NOT DETERMINED; TLV:NOT DETERMINED;TSRN 125438 - 5225P

CYCLOHEXYLAMINE***CAS# 108-91-8;FLAMMABLE;CORROSIVE;TOXIC(BY INGESTION AND SKIN); PEL:10PPM;TLV:10PPM

2) TYPICAL PHYSICAL DATA

PH: AS IS(APPROX.) 12.4 ODOR: STRONG AMINE
FL.PT.(DEG.F): 140 P-M(CC) SP.GR.(70F): 0.975
VAPOR PRESSURE(mmHG): ~ 18.0 VAPOR DENSITY(AIR=1): > 1.00
VISC cps70F: 16 %SOLUBILITY(WATER): 100.0
EVAP RATE: < 1.00(ETHER=1) APPEARANCE: COLORLESS TO YELLOW
PHYSICAL STATE:LIQUID FREEZE POINT(DEG.F): -12.00

3) REACTIVITY DATA

STABLE.MAY REACT WITH ACIDS.DO NOT CONTAMINATE. BETZ TANK CLEAN-OUT CATEGORY 'C'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

4) HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
CORROSIVE TO SKIN.ABSORBED BY SKIN.POTENTIAL SKIN SENSITIZER.
ACUTE EYE EFFECTS ***
CORROSIVE TO THE EYES
ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE
VAPORS.GASES,MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT. PROLONGED EXPOSURE MAY CAUSE DIZZINESS AND HEADACHE.
CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURE MAY CAUSE CNS DEPRESSION OR TISSUE NECROSIS.
MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN
SYMPTOMS OF EXPOSURE ***
CAUSES SEVERE IRRITATION,BURNS OR TISSUE ULCERATION WITH SUBSEQUENT SCARRING.
PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED OR ABSORBED THROUGH SKIN.

5) FIRST AID INSTRUCTIONS

SKIN CONTACT ***
REMOVE CLOTHING.WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FO
15 MIN.IMMEDIATELY CONTACT PHYSICIAN
EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT
INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN.
INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

6) SPILL,DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS***
VENTILATE,AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER.THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.
DISPOSAL INSTRUCTIONS****
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL
FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

MATERIAL SAFETY DATA SHEET

PRODUCT:OPTI-TROL 4000

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7) SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134.USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.
RECOMMENDED SKIN PROTECTION***
GAUNTLET-TYPE NEOPRENE GLOVES.CHEMICAL RESISTANT APRON
WASH OFF AFTER EACH USE REPLACE AS NECESSARY.
RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES.FACE SHIELD

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8) STORAGE AND HANDLING PRECAUTIONS

STORAGE INSTRUCTIONS***
KEEP CONTAINERS CLOSED WHEN NOT IN USE.
STORE IN COOL VENTILATED LOCATION.STORE AWAY FROM OXIDIZERS
HANDLING INSTRUCTIONS***
COMBUSTIBLE. DO NOT USE AROUND SPARKS OR FLAMES. BOND CONTAINERS DURING FILLING OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR ABOVE THE PRODUCT FLASH POINT.
****
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDAF
****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
1.4 GALLONS DUE TO CYCLOHEXYLAMINE;
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS:D001 =IGNITABLE; D002=CORROSIVE(SKIN,PH)
...DOT HAZARD/UN#/ER GUIDE# IS :CORROSIVE TO SKIN.COMBUSTIBLE/UN1760/#60
...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:NONE
...SARA SECTION 302 CHEMICALS:; CYCLOHEXYLAMINE(CAS# 108-91-8)
...SARA SECTION 313 CHEMICALS:NONE
...SARA SECTION 312 HAZARD CLASS:IMMEDIATE(ACUTE);DELAYED(CHRONIC);FIRE
...MICHIGAN CRITICAL MATERIALS: NONE
NFPA/HMIS : HEALTH - 3; FIRE - 2; REACTIVITY - 0; SPECIAL - CORR; PE - D
NFPA/HMIS : HEALTH - 3; FIRE - 2; REACTIVITY - 0; SPECIAL - CORR; PE - D

MATERIAL SAFETY DATA SHEET

ENVIRONMENTAL MARKETING SERVICES, LTD.
1520 LAKE LANSING ROAD
LANSING MI 48912
EMERGENCY PHONE: (517) 372-9121

SECTION 1 – PRODUCT INFORMATION

REVISED DATE: 3/96 **TRADE SECRET**

PRODUCT NAME: CW-1720

CHEMICAL FAMILY: Bromine-based Slimicide/Microbiocide

DOT CLASSIFICATION: Poisonous Liquids, (2-2-Dibromo-3-nitrilopropionamide), 6.1, UN2810, III, Keep Away From Food

SECTION 2 – HAZARDOUS INGREDIENTS

INGREDIENTS	CAS#	%	PEL/TWA
2-2-Dibromo-3-nitrilopropionamide*	10222-01-2	20%	Not established

*This material is listed in SARA, Title III, Section 313

SECTION 3 – PHYSICAL CHARACTERISTICS

BOILING POINT (°F):Decomposes
VAPOR PRESSURE (mmHg @ 20 °C): 17 (H_2O)
VAPOR DENSITY (AIR=1): N/D
VOLATILE ORGANIC COMPOUNDS: None
SOLUBILITY IN WATER: Complete
SPECIFIC GRAVITY (WATER=1): 1.20 ± 0.05
PERCENT VOLATILE BY VOLUME: <20%
pH: 6-8
APPEARANCE AND ODOR: Yellow to amber liquid, light, halogenic odor

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 159-165°C (318-329°F)
METHOD USED: Open Cup

FLAMMABLE LIMIT
LFL: No Data
UFL: No Data

EXTINGUISHING MEDIA: As for surroundings (carbon dioxide, dry chemical or water spray recommended)

SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: Always wear self-contained breathing apparatus when fighting fires involving chemicals. Do not breathe fumes. Use water spray to cool containers exposed to fire.

STABILITY : STABLE: XX
UNSTABLE:

INCOMPATIBILITY: Avoid contact with oxidizing agents, reducing agents and bases.

HAZARDOUS DECOMPOSITION: Thermal decomposition may generate bromine gas, hydrogen bromide, cyanogen bromide and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: Will not occur.

CONTINUED ON PAGE 2

SECTION 5 – SPILL, LEAK AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS: Dike spill. Save salvageable material. Soak up remainder with absorbent material and remove. Decontaminate spill area with 10% sodium bicarbonate in water. Rinse decontaminated solution to a chemical sewer or absorb with sand, clay or vermiculite. This product is a pesticide. Do not allow product to enter sewers or water courses.

DISPOSAL METHOD: If product can not be used in a manner consistent with its labelling, incinerate it (and contaminated solids) in accordance with all local, state and federal regulatory agencies.

SECTION 6 – HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Manufacturer's recommendation: 2 mg/m^3 (Ceiling)

EYE: May cause irritation, discomfort or irreversible eye injury.

SKIN CONTACT: May cause irritation, burns, or sensitization in susceptible individuals.

SKIN ABSORPTION: May be a skin sensitizer.

INGESTION: May be harmful or fatal if swallowed. Oral LD50 (rat)=830 mg/kg

INHALATION: May cause irritation to respiratory tract, headaches. LC50 (rat)=0.32 mg/l for 4 hrs., 2.6 mg/l for 1 hr.

CARCINOGENIC - NTP PROGRAM: None

SYSTEMIC AND OTHER EFFECTS: No target organ effects known or anticipated. Non-mutagenic, not a teratogen or reproductive hazard.

Hazard Ratings (NFPA): Health: 3, Fire: 1 , Reactivity: 0 , Special: Corrosive

SECTION 7 – FIRST AID

EYES: Flush with water for 15 minutes, holding lids open. Call a physician immediately.

SKIN: Immediately get under a safety shower. Remove contaminated clothing. Get prompt medical attention. Wash clothing before reuse. Discard contaminated shoes, belts, and other leather articles.

INGESTION: Give 2 glasses of water to drink. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If breathing has stopped, give mouth to mouth respiration and call a physician.

NOTE TO PHYSICIAN: Material is CORROSIVE. It may not be advisable to induce vomitting. Possible mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock and convulsions may be necessary.

CONTINUED ON PAGE 3

SECTION 8 – SPECIAL HANDLING INFORMATION

RESPIRATORY PROTECTION: Not needed under normal use conditions. Where misting may occur, use a MSHA/NIOSH approved half-mask, dust/mist air purifying respirator for protection against organic vapors.

VENTILATION: General ventilation satisfactory under normal use conditions.

EYE PROTECTION: Safety glasses with sideshields or chemical splash goggles.

PROTECTIVE GLOVES: Rubber or other impervious material.

PROTECTIVE CLOTHING: Rubber apron and footwear recommended.

SECTION 9 – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not freeze. Keep container closed when not in use. Keep away from children and other unauthorized personnel. Eyewash station and shower in work area recommended when handling chemicals of any kind. Wash thoroughly after handling.

OTHER PRECAUTIONS: Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container is emptied.

IN CASE OF EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS, CONTACT CHEMTREC AT 1-800-424-9300.

SECTION 10 – ECOLOGICAL INFORMATION

ENVIRONMENTAL TOXICITY:

Bobwhite quail, Dietary LC50: > 5620 ppm
Bobwhite quail, Oral LD50: 354 mg/kg
Mallard duck, Dietary LC50: >5620 ppm
Sheepshead Minnow (*Cyprinodon variegatus*), 96 hour LC50: 3.4 mg/L
Rainbow Trout (*Salmo gairdneri*), 96 hour LC50: 2.3 mg/L
Bluegill Sunfish (*Lepomis macrochirus*), 96 hour LC50: 2.3 mg/L
Daphnia Magna, 48 hour EC50: 0.86 mg/L
Mysid Shrimp (*Mysidopsis bahai*), 96 hour LC50: 0.72 mg/L
Eastern Oyster, 96 hour LC50: 0.37 mg/L

The above Environmental Toxicity information are from studies conducted on the active ingredient.

SECTION 11 – REGULATORY INFORMATION

- This product is classified as a hazardous material under the OSHA Hazard Communication Standard (29 CFR 1910.1200). It is categorized as an immediate and delayed health hazard.
- This product contains no hazardous or extremely hazardous substances as defined by CERCLA or SARA Title III, and releases are therefore not reportable.
- This product is acceptable for use as a slimicide in the manufacture of paper and paperboard under 21 CFR 176.300 (Slimicides).
- This product contains no ingredients on the Michigan Critical Materials Inventory.
- This product is regulated under the US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and is therefore exempt from US Toxic Substances Control Act (TSCA) Inventory listing requirements.

EPA Registration Number: 8622-20-47091

ENVIRONMENTAL MARKETING SERVICES, LTD
1520 LAKE LANSING ROAD
LANSING MI 48912
TELEPHONE: 517-372-9121

PRODUCT DATA SHEET

PRODUCT NAME: CW 1720

PHYSICAL PROPERTIES

SPECIFIC GRAVITY	1.20 ± 0.05
BULK DENSITY	9.8 Lbs/Gal
FORM	Liquid
COLOR	Amber
ODOR	Light Anesthetic
pH	Not applicable
SOLUBILITY	Appreciable
FLASH POINT (°F)	159-165 C (Open cup)
FREEZE POINT(°F)	32 F

PRODUCT DESCRIPTION:

CW 1720 is a nonoxidizing biocide that can be used alone or in combination with other microbiocides. CW 1720 is effective against a wide range of aerobic and anaerobic bacteria. Also CW 1720 is effective on fungi and less active on algae. CW 1720 is also effective over a wide pH range 6-9.

FEED METHOD:

CW 1720 should be fed where adequate mixing occurs in the water system. Addition should be made with a metering pump. Check with your Environmental Marketing Services, Ltd. representative for proper dosage of CW 1720.

SPECIAL INFORMATION:

Do not mix with other chemicals. Avoid contact with eyes and skin. Wear protective clothing, rubber gloves and goggles when handling. Store in cool, dry area. Keep container closed when not in use. Avoid freezing.

CW-1720 meets the requirements of the Food and Drug Administration (FDA) for use in the manufacture of paper and paperboard intended to contact food per the following regulations: 21 CFR 176.170, 176.180, and 176.300. The maximum allowable feedrate under these guidelines is 0.1 lb/ton of dry weight fiber for the active ingredient (0.5 lb/ton on an "as is" basis).

FIRST AID PROCEDURES:

Eyes: Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.
Skin: Wash off in flowing water or shower.
Swallowed: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician.

See Material Safety Data Sheet for more health and safety information.

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT

NALCO 7569 FOAM CONTROL CHEMIC

rec'd MSDS 9/25/95

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7569 FOAM CONTROL CHEMIC *
DESCRIPTION: A blend of a polyglycol ester and a polyether surfactant *
*
NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER*
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme *

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredient(s) hazardous.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN: Flush with water for 15 minutes.
INGESTION: Induce vomiting. Give water. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause transient irritation.
SKIN CONTACT: Can cause transient irritation. May cause a more severe response if skin is abraded.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not

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SECTION 5 HEALTH EFFECTS INFORMATION (CONTINUED)

identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: Toxicity studies have been conducted on the components of this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):
Polyether surfactant LD_{50} = Greater than 4,000 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS): Polyether surfactant
COMMENTS: A single prolonged exposure is not likely to result in the material being absorbed in harmful amounts.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS): Polyether surfactant
SKIN IRRITATION INDEX DRAIZE RATING: 1.39/8.0 Minimally irritating

COMMENTS: Slight to moderate redness, without swelling, was noticed after 4-hours of contact. The redness persisted for seven days.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS): Polyether surfactant
EYE IRRITATION INDEX DRAIZE RATING: 5.7/110.0 Minimally irritating

COMMENTS: Slight conjunctival irritation was noted. However, this condition cleared within 48-hours. No iridial or corneal involvement was noted.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear amber	FORM: Liquid		*
DENSITY:	8.3 lbs/gal.		*
SPECIFIC GRAVITY:	0.99 @ 68 Degrees F	ASTM D-1298	*
pH (NEAT) =	6	ASTM E-70	*
VISCOSITY:	290 cps @ 68 Degrees F	ASTM D-2983	*
BOILING POINT:	Greater than 250 Degrees F		*
	@ 760 mm Hg	ASTM D-86	*
FLASH POINT:	None		*
VOLATILE ORGANIC			*
COMPOUND (VOC):	0 lbs/gal.	EPA METHOD 24	*
			*

NOTE: These physical properties are typical values for this product. *

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

SECTION 8 FIRE AND EXPLOSION INFORMATION (CONTINUED)

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: Do not breathe smoke from burning product.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO_2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies havenot been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, (i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

BIOCHEMICAL OXYGEN DEMAND (5-day BOD): 370,000 ppm

CHEMICAL OXYGEN DEMAND (COD): 1,600,000 ppm

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

SECTION 14 REGULATORY INFORMATION (CONTINUED)

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, none of the ingredients in this product are hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA):
Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under 21 CFR 176.210 defoaming agents used in manufacturing paper and paperboard.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
None of the ingredients are specifically listed.

SECTION 14 REGULATORY INFORMATION (CONTINUED)

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments),
Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Polymer surfactant	Trade secret
Polyglycol ester	Trade secret

SECTION 15 ADDITIONAL INFORMATION

Nalco internal number F700889

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

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DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

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PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OHSA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 06/01/95 DATE PRINTED: 09/16/95

NALCO

MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) **(800) I-M-ALERT**

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT

NALCO 93PG012 FOAM CONTROL CHE

7562

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 93PG012 FOAM CONTROL CHE
DESCRIPTION: A blend of polyether surfactant and polyglycol esters

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredient(s) hazardous.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes.
SKIN: Flush with water for 15 minutes.
INGESTION: Induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause mild, short-lasting irritation.
SKIN CONTACT: May cause irritation with prolonged contact. May cause a more severe response if skin is scratched or cut.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO_2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton, and butyl (compatibility studies have not been performed).

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

SECTION 14 REGULATORY INFORMATION (CONTINUED)

This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
This product does not contain ingredients listed by State Right To Know Laws.

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with

SECTION 17 BIBLIOGRAPHY (CONTINUED)

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 11/15/94 DATE PRINTED: 11/19/94

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT

NALCON 7647 MICROBIOCIDE

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCON 7647 MICROBIOCIDE
DESCRIPTION: An aqueous solution of substituted isothiazolinone

NFPA 704M/HMIS RATING: 3/3 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
5-chloro-2-methyl-4 isothiazolin-3-one	26172-55-4	1.15
2-methyl-4-isothiazolin-3-one	2682-20-4	0.35

SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER: Corrosive. Causes eye damage and skin burns. May cause allergic skin reaction. May be harmful if inhaled. May be fatal if swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield and rubber gloves when handling. Avoid breathing vapor or mist. Avoid contamination of food. Do not take internally. Wash thoroughly after handling.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Wash thorougly with soap and rinse with water. Remove and wash contaminated clothing before reuse.

INGESTION: Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or, if these are not available, drink large quantities of water. Avoid alcohol. Call a physician immediately.

INHALATION: Remove immediately to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not

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SECTION 6 TOXICOLOGY INFORMATION (CONTINUED)

SKIN IRRITATION INDEX DRAIZE RATING: Severe irritant

EYE IRRITATION INDEX DRAIZE RATING: Corrosive (corneal damage)

SKIN SENSITIZATION: This product is a human sensitizer in its undiluted form.

A Guinea pig (Buehler Technique) sensitization study with an induction dosage of 90 ppm of active ingredients followed by a insult of 429 ppm of active ingredients was positive.

A human repeated insult patch study of 28 ppm active ingredients followed by a insult of 56 ppm of active ingredients resulted in no effect to the subjects tested.

SUBCHRONIC TOXICITY RESULTS: A 90-day dietary study in dogs of 840 ppm of the product's active ingredients resulted in no mortalities or pathological findings. A 90-day dermal study in rabbits of 0.4 mg/kg/day of the product's active ingredients resulted in irritation but no pathological effects.

CHRONIC TOXICITY RESULTS: A teratology study with rabbits and rats was negative with dosages of active ingredient ranging from 1.5 mg/kg to 15 mg/kg. Mutagenicity results were equivocal. A 30-month skin painting mouse study with applications of 400 ppm of active ingredients three times per week showed no increase tumor frequency over control animals.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Pale yellow to green	FORM: Liquid	ODOR: Mild
DENSITY:	8.6 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
pH (NEAT) =	3 - 5	ASTM E-70
FREEZE POINT:	25 Degrees F	ASTM D-1177
FLASH POINT:	None	

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx, SOx or HCl under fire

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

PESTICIDE DISPOSAL: Pesticide wastes are hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instruction, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

METAL CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

PLASTIC CONTAINERS: Do not reuse empty container. Triple rinse (or equivalent). Then puncture and dispose of in a sanitary landfill, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 20,000 mg/L

TOTAL ORGANIC CARBON (TOC): 7,850 mg/L

AQUATIC DATA: Active ingredient.

6 day static acute LC_{50} to Bluegill Sunfish = 0.54 ppm
Standard Deviation of 6 day LC_{50} = 0.47 - 0.62 ppm

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES : CORROSIVE LIQUID, N.O.S.

UN/ID NO	:	UN 1760
HAZARD CLASS - PRIMARY	:	8 - CORROSIVE
PACKING GROUP	:	II
IMDG PAGE NO	:	8147
IATA NOTE	:	P:808 C:812
IATA LIMIT	:	C: 30 L
FLASH POINT	:	NONE
HAZARDOUS COMPONENT(S)	:	5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE
RQ LBS (PER PACKAGE)	:	NONE
RQ COMPONENT(S)	:	NONE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

5-chloro-2-methyl-4 isothiazolin-3-one - Corrosive, sensitizer
2-methyl-4-isothiazolin-3-one - Corrosive, sensitizer

5-chloro-2-methyl-4 isothiazolin-3-one (mist or aerosol) = 0.5 mg/m³ TLV
Manufacturer's recommendation

CERCLA, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTION 14 REGULATORY INFORMATION (CONTINUED)

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
This product contains the following ingredients covered by the Clean Water Act:

Cupric nitrate - Section 307, 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product contains the following substance(s) identified on the Michigan Critical Materials Register:

Copper, as Cu = 0.025%

STATE RIGHT TO KNOW LAWS:
The following state(s) identify the ingredient(s) shown below as hazardous:

California - Copper
Massachusetts, New Jersey, Pennsylvania - magnesium nitrate

INTERNATIONAL REGULATIONS:

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70.

SECTION 15 ADDITIONAL INFORMATION

Note: Other toxicological results are available upon request.

SECTION 17 BIBLIOGRAPHY (CONTINUED)

Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OHSA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 02/01/95 DATE PRINTED: 02/04/95

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT Acid

NALCO 7594 FABRIC CLEANER

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) **(800) I-M-ALERT**

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7594 FABRIC CLEANER
DESCRIPTION: A blend of organic acids and butyl cellosolve.

NFPA 704M/HMIS RATING 2/2 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Acetic acid	64-19-7	1-5
Ethylene glycol monobutylether	111-76-2	20-40

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes burns to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES:	Immediately flush with water for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN:	Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION:	Do not induce vomiting. Give water. Call a physician.
INHALATION:	Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Can cause moderate to severe irritation.
SKIN CONTACT: Can cause moderate to severe irritation.
INGESTION: Can cause central nervous system depression, nausea, dizziness, vomiting or unconsciousness depending on the length of exposure and on the first aid action given. Can cause kidney damage. Can be fatal. Ingestion of large quantities may result in red blood cell hemolysis.
INHALATION: Can cause severe respiratory irritation.

SYMPTOMS OF EXPOSURE:
ACUTE: Inhalation of high concentrations of product can cause nausea, dizziness, vomiting, stupor or unconsciousness.

CHRONIC: Prolonged skin contact with product may cause lesions on the skin and can cause dry skin and defatting resulting in irritation and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

AGGRAVATION OF EXISTING CONDITIONS: May aggravate pre-existing liver and kidney conditions, eye and skin problems, and skin disorders.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: Toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):
Ethylene glycol monobutylether LD50 = 1,480 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):
Ethylene glycol monobutylether LD50 = 490 mg/kg

ACUTE INHALATION TOXICITY (ALBINO RATS):
Ethylene glycol monobutylether LC50 = 450 ppm (4-hour exposure)

OTHER TOXICITY RESULTS: Animals receiving repeated doses develop hemolytic anemia and secondary injury to the kidney and liver.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear yellow	FORM: Liquid	ODOR:	Pungent
DENSITY:	8.8 lbs/gal.		
SOLUBILITY IN WATER:	Completely		
SPECIFIC GRAVITY:	1.06		
pH (NEAT) = 2.6	pH (at 1%) = 3.2		ASTM E-70
BOILING POINT:	Greater than 212 Degrees F @ 760 mm Hg		ASTM D-86
FLASH POINT:	Greater than 200 Degrees F (TCC)		ASTM D-56
PERCENT VOLATILE BY WEIGHT:	70		

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 200 Degrees F (TCC) ASTM D-56

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: Contact with reactive metals (e.g, aluminum) may result in the generation of flammable hydrogen gas.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

Avoid alkaline materials (eg. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanides, sulfides, hypochlorites, chlorites) which can generate heat with splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respiratory with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces

SECTION 10 PERSONAL PROTECTION EQUIPMENT (CONTINUED)

with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors or mists may be released.

PROTECTIVE EQUIPMENT: Wear impermeable gloves, boots, apron and a face shield with chemical splash goggles. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be deep-well injected in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Acetic acid - Irritant
Ethylene glycol monobutylether - Kidney damage

Acetic acid = TWA 10 ppm, STEL 15 ppm ACGIH/TLV
25 mg/m3, 37 mg/m3 ACGIH/TLV
Ethylene glycol monobutylether = TWA 25 ppm, 121 mg/m3 (skin) ACGIH/TLV

Acetic acid = TWA 10 ppm, 25 mg/m3 OSHA/PEL
Ethylene glycol monobutylether = TWA 25 ppm, 120 mg/m3 (skin) OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 14 REGULATORY INFORMATION (CONTINUED)

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
XX Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product contains the following ingredient(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals.

Ethylene glycol monobutylether	111-76-2	20-40

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
This product contains the following ingredients covered by the Clean Water Act:

Acetic acid - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments),
Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product contains the following ingredients covered by the Clean Air Act:

Ethylene glycol monobutylether - Sections 111 and 112

SECTION 14 REGULATORY INFORMATION (CONTINUED)

Acetic acid - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
Regulated in those states using the TLV for acetic acid and ethylene glycol monobutylether as a criteria for listing.

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70 (Class E). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Acetic acid	64-19-7	1-5
Ethylene glycol monobutylether	111-76-2	20-40

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

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PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse, PhD., Toxicologist
DATE CHANGED: 03/18/94 DATE PRINTED: 02/13/95

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT

NALCO 7597 CLEANER

Emergency Telephone Number

Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7597 CLEANER
DESCRIPTION: An Aqueous solution of caustic, gluconate, and a surfactant

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous. One or more is being claimed as a trade secret under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Nonionic surfactant	Proprietary	1-5
Potassium hydroxide	1310-58-3	5-10
Sodium hydroxide	1310-73-2	10-20

SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER! Contains sodium and potassium hydroxide. Causes burns to skin and eyes. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield, gloves, and protective clothing when handling. Avoid breathing of mist. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES:	Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN:	Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.
INGESTION:	Do not induce vomiting. Give water. Call a physician.
INHALATION:	Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 4 FIRST AID INFORMATION (CONTINUED)

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT:	Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.
SKIN CONTACT:	Corrosive to the skin with possible permanent damage depending on the length of exposure and on the first aid action given.
INGESTION:	Can be harmful.
INHALATION:	Can be corrosive to the mucous membranes and the lungs.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

TOXICITY STUDIES: No toxicity studies have been conducted on this product.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear, dark brown FORM: Liquid

DENSITY:	11.1 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.33 @ 77 Degrees F	ASTM D-1298
pH (NEAT) =	14	ASTM E-70
VISCOSITY:	12 cps @ 74 Degrees F	ASTM D-2983
FREEZE POINT:	Greater than -50 Degrees F	ASTM D-1177
BOILING POINT:	243 Degrees F @ 760 mm Hg	ASTM D-86
FLASH POINT:	Greater than 200 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 200 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear impermeable gloves, boots, apron and a face shield with chemical splash goggles. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D002.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be deep-well injected in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES	:	CAUSTIC ALKALI LIQUID, N.O.S.
UN/ID NO	:	UN 1719
HAZARD CLASS - PRIMARY	:	8 - CORROSIVE
PACKING GROUP	:	II
IMDG PAGE NO	:	8136
IATA PACKING INSTRUCTION	:	CARGO: 813
IATA CARGO AIRCRAFT LIMIT	:	30 L (MAX NET QUANTITY PER PACKAGE)
FLASH POINT	:	NONE
HAZARDOUS COMPONENT(S)	:	SODIUM HYDROXIDE, POTASSIUM HYDROXIDE

SECTION 13 TRANSPORTATION INFORMATION (CONTINUED)

RQ LBS (PER PACKAGE) : 5,000
RQ COMPONENT(S) : SODIUM HYDROXIDE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Nonionic surfactant - Eye burns
Potassium hydroxide - Corrosive
Sodium hydroxide - Corrosive

Sodium hydroxide = Ceiling 2 mg/m^3 ACGIH/TLV
Potassium hydroxide = Ceiling 2 mg/m^3 ACGIH/TLV

Sodium hydroxide = Ceiling 2 mg/m^3 OSHA/PEL
Potassium hydroxide = Ceiling 2 mg/m^3 OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:
This product contains sodium hydroxide, a Reportable Quantity (RQ) substance and if 5,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

SECTION 14 REGULATORY INFORMATION (CONTINUED)

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
This product contains the following ingredients covered by the Clean Water Act:

Sodium hydroxide - Section 311
Potassium hydroxide - Section 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Potassium hydroxide	1310-58-3
Sodium hydroxide	1310-73-2

SECTION 14 REGULATORY INFORMATION (CONTINUED)

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70 (Class E). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredients(s):

Chemical Name	CAS #	% Concentration Range
Nonionic surfactant	Proprietary	1-5
Potassium hydroxide	1310-58-3	5-10
Sodium hydroxide	1310-73-2	10-20

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS

SECTION 17 BIBLIOGRAPHY (CONTINUED)

TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 11/16/95 DATE PRINTED: 12/16/95

Recd 05/06/91

NALCO

MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 7627 PITCH DISPERSANT

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 7627 PITCH DISPERSANT
DESCRIPTION: An aqueous solution of an acrylate polymer

NFPA 704M/HMIS RATING: 1/1 HEALTH 0/0 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation of the ingredient(s) under OSHA's Hazard Communication Rule, 29 CFR 1910.1200 has found none of the ingredients hazardous.

SECTION 3 PRECAUTIONARY LABEL INFORMATION

CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes, and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: May cause irritation with prolonged contact.
SKIN CONTACT: May cause irritation with prolonged contact.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

NALCO CHEMICAL COMPANY ONE NALCO CENTER • NAPERVILLE, ILLINOIS 60563-1198

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: No toxicity studies have been conducted on this product.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear to slightly yellow	FORM: Liquid	ODOR: Sharp	*
DENSITY:	10.1 lbs/gal.		*
SOLUBILITY IN WATER:	Completely		*
SPECIFIC GRAVITY:	1.21-1.24 @ 25 Degrees C	ASTM D-1298	*
pH (NEAT) =	7.5	ASTM E-70	*
POUR POINT:	-14 Degrees F	ASTM D-97	*
FLASH POINT:	Greater than 212 Degrees F (PMCC)	ASTM D-93	*

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 212 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx or SOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO_2, NOx, SOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant vapors, mists or aerosols are generated, wear a NIOSH approved or equivalent respirator.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

SECTION 10 PERSONAL PROTECTION EQUIPMENT (CONTINUED)

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment or doing maintenance.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA: Based on a similar product.

96 hour static acute LC_{50} to Bluegill Sunfish = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality

SECTION 12 ENVIRONMENTAL INFORMATION (CONTINUED)

or abnormal effects. This was the highest dosage evaluated.

96 hour static acute LC_{50} to Rainbow Trout = Greater than 1,000 ppm

96 hour no observed effect concentration is 560 ppm based on no mortality or abnormal effects.

96 hour static acute LC_{50} to Sheepshead Minnow = Greater than 1,000 ppm

96 hour no observed effect concentration is 1,000 ppm based on no mortality or abnormal effects. This was the highest dosage evaluated.

TOXICITY RATING: No appreciable toxicity

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, this product is not hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

SECTION 14 REGULATORY INFORMATION (CONTINUED)

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA):
Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under 21 CFR 176.170 components of paper and paperboard in contact with aqueous and fatty foods.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Acrylate polymer	Trade secret
Sodium sulfate	7757-82-6
Water	7732-18-5

INTERNATIONAL REGULATIONS:

SECTION 14 REGULATORY INFORMATION (CONTINUED)

This is not a WHMIS controlled product under The House of Commons of Canada Bill C-70. * *

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

SECTION 17 BIBLIOGRAPHY (CONTINUED)

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OHSA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 04/25/91 DATE PRINTED: 04/27/91

Grain Processing Corporation
MATERIAL SAFETY DATA SHEET

Date Prepared. 10/02/95

SECTION I

Product Name: COATMASTER® K520/K52F, K530/K53F, K540/K54F, K550/K55F, K560/K56F, K570/K57F, K580/K58F, K59F, K92F ethylated starches

Chemical Name: Starch, 2-hydroxyethyl ether, hydrolyzed, CAS #68512-26-5

Formula: $R_1 - O - R_2$ R_1 = Starch, $HO(C_6H_{10}O_5)_nH$ R_2 = Hydroxyethyl substituent groupings

Manufacturer: *Grain Processing Corporation*

Address: P.O. Box 349, 1600 Oregon Street, Muscatine, Iowa 52761

For Information on Health Hazards Call: 319-264-4304
For Other Information Call: 319-264-4265

SECTION II - Hazardous Ingredients of Mixtures

Principal Hazardous Component(s):	% by Wt.	OSHA TWA	ACGIH TWA
Starch	88	Nuisance particulate, 15 mg/m^3 of total dust	Nuisance particulate, 10 mg/m^3 of total dust

SECTION III - Physical Data

Boiling Point (°F): Not applicable

Specific Gravity (H_2O=1): 1.50

Vapor Pressure (mm Hg): Not applicable

Volatiles (% by Wt.): 12 (moisture)

Vapor Density (Air=1): Not applicable

Evaporation Rate (n-butyl acetate=1): Not applicable

Solubility in Water: Insoluble

Appearance and Odor: White granular powder; typical corn starch odor

SECTION IV - Fire and Explosion Hazard Data

Flash Point (Method Used): Not applicable

Extinguishing Media: Water

Special Fire Fighting Procedures: None

Unusual Fire and Explosion Hazards. Dust-air mixtures may be explosive. The minimum ignition temperature reported for dry corn starch, through 200 mesh, is 380°C (716°F). The minimum explosive concentration of a dust cloud is 0.04 oz/cu ft. Avoid open lights, flames, or welding in area of dry product.

SECTION V - Health Hazard Data

Route(s) of Entry: Inhalation - as dust. Skin - no hazard. Ingestion - no hazard, but not a food product

Carcinogenicity: NTP - no. IARC - no. OSHA - no.

Threshold Limit Value: See Section II

Effects of Overexposure: Not applicable

SECTION VI - Reactivity Data

Stability. Stable

Conditions to Avoid. Any air movement which can create clouds of starch. Open flames, smoking materials, hot coals of any type, welding operations, open lights, etc.

Incompatibility (Materials to Avoid): Strong oxidizing agents

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur

SECTION VII - Spill or Leak Procedures

Steps to Be Taken In Case Material Is Released or Spilled: Sweep up and/or flush clear with water; avoid production of dust

Waste Disposal Method: Dispose of in approved solid waste disposal area per current regulations

SECTION VIII - Special Protection Information

Respiratory Protection: Use appropriate NIOSH/MSHA approved respirator

Eye Protection: No protection required; safety glasses good practice

Ventilation: As needed for dust control

Work/Hygiene Practices: Good housekeeping to keep dust down

Protective Gloves: Not required

Other Protective Clothing or Equipment: None required

SECTION IX - Special Precautions

Precautions to Be Taken In Handling and Storing: Avoid handling procedures which produce dust

Other Precautions: None required

SECTION X - Transportation

Department of Transportation - Classification: Not applicable

Department of Transportation - Identification Number: Not applicable

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees.

GPC-MSDS 10-95
K520/K52F, K530/K53F, K540/K54F, K550/K55F, K560/K56F,
K570/K57F, K580/K58F, K59F, K92F

Du Pont Polymers

NOL001 Revised 13-DEC-1994 Printed 29-DEC-1994

"ELVANOL" Polyvinyl Alcohol

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"ELVANOL" is a registered trademark of DuPont.

Corporate MSDS Number DU000309

 # Tradenames and Synonyms

"ELVANOL" 50-42, 50-42S4,
"ELVANOL" 51-05, 51-05S4,
"ELVANOL" 70-06,
"ELVANOL" 71-30
"ELVANOL" 75-15,
"ELVANOL" 85-30, 85-82,
"ELVANOL" 90-50,
"ELVANOL" 91-03, #
"ELVANOL" HV,
"ELVANOL" T-25, T-25LR, T-66, T-66LR

 # Company Identification

MANUFACTURER/DISTRIBUTOR
DUPONT PACKAGING & INDUSTRIAL POLYMERS
1007 MARKET STREET
WILMINGTON, DE 19898

PHONE NUMBERS

Product Information	1-800-441-7515
Transport Emergency	CHEMTREC 1-800-424-9300
Medical Emergency	1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
VINYL ALCOHOL POLYMERS & COPOLYMERS	9002-89-5	0-99
	25213-24-5	0-99
	54626-91-4	0-99

(Continued)

COMPOSITION/INFORMATION ON INGREDIENTS(Continued)

*METHANOL, BULK	67-56-1	<1.4
*METHANOL, PACKAGED	67-56-1	<1.8
SODIUM ACETATE	127-09-3	<1.4
PROCESS AIDS		0-3

* Regulated as a Toxic Chemical under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Potential Health Effects

Before using "Elvanol" Polyvinyl Alcohol read Du Pont Bulletin, "Safe Handling Information."

ACUTE OR IMMEDIATE EFFECTS: ROUTES OF ENTRY AND SYMPTOMS

INGESTION Not a probable route of entry. The oral LD-50 of one type of "Elvanol" is greater than 11000 milligrams per kilogram of body weight as determined in rats, which is low toxicity. Other types of "Elvanol" are predicted to have similar LD-50 values.

SKIN One type of "Elvanol" was tested on male guinea pigs. No irritation or sensitization effects were noted. Based on experience with handling these polymers and others which are similar chemically, no unusual dermatitis hazard is expected from routine handling.

EYE Mechanical irritation only.

INHALATION "Elvanol" is supplied as a granular solid. Under certain conditions of use, dust may be formed. Treat this dust as a nuisance dust; use a dust mask if dust exceeds the recommended limits. "Elvanol" is rarely heated above 100 degrees C. If the temperature exceeds 200 degrees C, fumes irritating to the eyes, nose, and throat will be evolved. If exposed to these fumes, the eyes will tear, itch, and turn red. The nose will burn. The throat will burn and coughing may result.

CHRONIC EFFECTS None are known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE None are known.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

(Continued)

FIRST AID MEASURES

First Aid

If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician.

Wash skin with soap and plenty of water.

Wash eyes with water.

If hot polymer contacts skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical attention for a thermal burn.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Ignition Temperature: No data

Fire and Explosion Hazards:

The solid polymer can be ignited and burned only with difficulty. Dust from "Elvanol" can form an explosive mixture in the air. Information about special precautions needed for bulk handling is available on request.

Hazardous Combustion Products: Complete combustion gives carbon dioxide and water. Incomplete combustion gives in addition carbon monoxide and hydrocarbon oxidation products, including organic acids, aldehydes and alcohols.

Extinguishing Media

Water, CO_2.

Foam.

Fire Fighting Instructions

Use self-contained breathing apparatus if exposed to fumes.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Accidental Release Measures

Pick up spilled polymer to avoid slipping hazard.

(Continued)

HANDLING AND STORAGE

Handling (Personnel)
See FIRST AID and PROTECTION INFORMATION sections.

Storage
Store in a cool dry area. Keep containers and packages closed to prevent contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls
In the event the polymer is heated above 200 degrees C, local ventilation should be used to avoid exposure to fumes. Use ventilation to avoid exposure of personnel to dust.

Personal Protective Equipment
EYE Eye protection is recommended as good industrial hygiene practice.

SKIN Gloves and a long sleeve shirt are recommended, particularly when hot polymer is being handled.

RESPIRATOR If local ventilation is inadequate, use a respirator for fumes or a dust mask for dust.

Exposure Guidelines
Applicable Exposure Limits

VINYL ALCOHOL POLYMERS & COPOLYMERS		
PEL	(OSHA)	None Established
TLV	(ACGIH)	None Established
AEL *	(Du Pont)	10 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 8 Hr. TWA, respirable dust
METHANOL, BULK		
PEL	(OSHA)	200 ppm, 260 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	200 ppm, 262 mg/m3, 8 Hr. TWA, Skin STEL 250 ppm, 328 mg/m3, Skin
AEL *	(Du Pont)	200 ppm, 8 & 12 Hr. TWA, Skin
METHANOL, PACKAGED		
PEL	(OSHA)	200 ppm, 260 mg/m3, 8 Hr. TWA
TLV	(ACGIH)	200 ppm, 262 mg/m3, 8 Hr. TWA, Skin STEL 250 ppm, 328 mg/m3, Skin
AEL *	(Du Pont)	200 ppm, 8 & 12 Hr. TWA, Skin
SODIUM ACETATE		
PEL	(OSHA)	None Established
TLV	(ACGIH)	None Established
AEL *	(Du Pont)	10 mg/m3, 8 Hr. TWA

* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

(Continued)

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	Approximately 200 deg. C (392 deg. F)
% Volatiles	5 WT%
Solubility in Water	Moderate solubility
Odor	Mild
Form	Free-flowing granules
Color	White
Specific Gravity	Not applicable

STABILITY AND REACTIVITY

Other Hazards

Stability at Room Temperature: Stable.

Conditions to Avoid: Temperatures above 200 deg. C (392 deg. F)

Materials to Avoid: None are known.

Hazardous Decomposition Products: Carbon monoxide and hydrocarbon oxidation products, including acids, aldehydes, and alcohols.

Polymerization: Will not occur.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity

Concentrations of "Elvanol" up to 10,000 milligrams per liter of water showed no mortality or other effect when tested on bluegill sunfish.

DISPOSAL CONSIDERATIONS

Waste Disposal

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

(Continued)

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name	Not applicable
Hazard Class	Not regulated

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status	Listed.

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- Methanol.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- Ethylene oxide and hydrazine.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- None known.

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating

Health	0
Flammability	1
Reactivity	0

Personal Protection rating to be supplied by user depending on use conditions.

 # Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. "ELVANOL" is intended for industrial use and is expressly not for use in cosmetic, personal care and pharmaceutical or similar applications. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

(Continued)

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS	T. E. SCHROER
Address	DUPONT PACKAGING & INDUSTRIAL POLYMERS CHESTNUT RUN PLAZA 713 WILMINGTON, DE 19880-0713
Telephone	302-999-4664

# Indicates updated section.

End of MSDS

Henkel

Henkel Corporation

300 BROOKSIDE AVENUE
AMBLER, PENNSYLVANIA 19002

MATERIAL SAFETY DATA SHEET

MR. MIKE SCHOLLY /ROBOT CUSTOMER # 002750001
MICHIGAN PAPERBOARD CORP
79 EAST FOUNTAIN ST

BATTLE CREEK MI 49017

1 PRODUCT INFORMATION

PRODUCT TRADE NAME FOAMASTER VF

SYNONYMS Trade Secret Blend

HEALTH 1 FLAMMABILITY 1 REACTIVITY 0

National Fire Protection Association (NFPA) Rating

HEALTH 1 FLAMMABILITY 1 REACTIVITY 0

Hazardous Materials Identification System (HMIS) Rating

This Material Safety Data Sheet complies with 29 CFR 1910.1200 OSHA Hazard Communication Standard

TELEPHONE NUMBER 215/628-1504 EMERGENCY NUMBER 215/628-1000

2 COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD DATA
Trade secret petroleum derivatives and other additives	Trade Secret	100	PEL: 5 mg/m³ (oil mist) TLV: 5 mg/m³ (oil mist) 10 mg/m³ STEL

LISTED AS CARCINOGEN BY: IARC NO NTP NO OSHA NO ACGIH NO OTHER NO

PEL = OSHA Permissible Exposure Limit TLV = ACGIH Threshold Limit

STEL = Short Term Exposure Limit TWA = Time Weighted Average

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Yellow liquid with hydrocarbon odor. May cause mild skin and eye irritation. Vapors or mist may cause respiratory irritation.

POTENTIAL HEALTH EFFECTS

ROUTES OF EXPOSURE

INHALATION

Overexposure to mist or spray may cause irritation of respiratory tract. Overexposure to aerosol or mist may cause lung inflammatory condition.

SKIN CONTACT

Possible mild irritation on prolonged contact.

SKIN ABSORPTION

No data.

EYE CONTACT

Mild transient irritation expected.

INGESTION

May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE

Possible eye, skin and respiratory tract irritation.

CHRONIC OVEREXPOSURE

Overexposure to aerosol or mist may cause lung inflammatory condition. May aggravate existing skin, eye and lung conditions.

4 FIRST AID MEASURES

EYES

Flush at once with large amounts of water for at least 15 minutes holding lids apart. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention.

SKIN

Wash thoroughly with soap and water, remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation should develop.

INHALATION

Remove to fresh air.

INGESTION

Do not induce vomiting. If vomiting should occur spontaneously, keep airway clear. Get medical attention. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN

None

5 FIRE FIGHTING MEASURES

FLASH POINT (Test Method) >200°F (93°C) PMCC AUTOIGNITION TEMPERATURE Not Available

FLAMMABLE LIMITS IN AIR, % by Volume LOWER Not Available UPPER Not Available

EXTINGUISHING MEDIA Water spray, carbon dioxide, foam and dry chemical.

UNUSUAL FIRE OR EXPLOSION HAZARDS

None

SPECIAL FIRE FIGHTING PROCEDURES

Cool exposed containers with water spray. Self-contained breathing apparatus in confined areas.

6 ACCIDENTAL RELEASE MEASURES

Stop leaks. Clean up large spills with vacuum truck. Soak up small spills with absorbent material and place in labeled waste container for disposal. Wear adequate personal protective clothing and equipment.

7 HANDLING AND STORAGE

PRECAUTIONARY STATEMENTS

CAUTION!
MAY CAUSE IRRITATION.
Harmful if inhaled.
Avoid contact with eyes, skin, and clothing.
Avoid breathing spray or mist.
Wear chemical splash goggles, gloves and protective clothing when handling.
Use with adequate ventilation and employ respiratory protection where spray or mist may be generated.
Wash thoroughly after handling.
Do not take internally.
FOR INDUSTRIAL USE ONLY.

OTHER HANDLING & STORAGE REQUIREMENTS

Always mix well before using. Product may congeal or stratify if subjected to below freezing temperatures. Store in a dry place at 40°-80°F (4°-27°C) away from direct heat. Mix well before using.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENTS	Local exhaust ventilation recommended.
PERSONAL PROTECTIVE EQUIPMENT	
EYE PROTECTION	Chemical splash goggles or face shield.
SKIN PROTECTION	Rubber or plastic gloves.
RESPIRATORY PROTECTION	NIOSH/MSHA approved respirator if necessary. Follow manufacturer's recommendations.
OTHER REQUIRED EQUIPMENT	Standard work clothing and work shoes.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Opaque yellow liquid

ODOR
Hydrocarbon

SPECIFIC GRAVITY (Water = 1)
0.92

VAPOR PRESSURE
Not Available

VAPOR DENSITY (Air = 1)
Not Available

EVAPORATION RATE (Butyl Acetate = 1)
Not Available

DENSITY @ 20°C
7.7 lb/gal

SOLUBILITY IN WATER, % BY Weight
Dispersible

pH
10%: 6.5

BOILING POINT (760 mm Hg)
Not Available

FREEZING POINT
Not Available

MELTING POINT
Not Applicable

VISCOSITY
350 cp Brookfield

% VOLATILES BY WEIGHT
10.04 (as VOC)

10 STABILITY AND REACTIVITY

STABLE [X] UNSTABLE [ ]

CONDITIONS TO AVOID
None

INCOMPATIBLE MATERIALS
Strong oxidizing agents.

HAZARDOUS POLYMERIZATION WILL OCCUR [ ]
WILL NOT OCCUR [X]

CONDITIONS TO AVOID
None

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon dioxide and carbon monoxide.

11 TOXICOLOGICAL INFORMATION

Acute oral LD50	=	>5.0 g/kg (rat)
Primary Skin Irritation Index	=	1.8/8.0 (rabbit)
Draize Eye Irritation Score	=	5/110 (rabbit)

12 ECOLOGICAL INFORMATION

Not Available

13 DISPOSAL CONSIDERATIONS

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, State and local regulations.

14 TRANSPORT INFORMATON

OT PROPER SHIPPING NAME Not Applicable

15 REGULATORY INFORMATION

NOTICE: This product does not contain any ingredients subject to the reporting requirements of SARA Title III, Section 313 (40 CFR Part 372).

SARA Section 311/312: Acute and Chronic Health Hazard.

TSCA: Components found in TSCA Inventory.

New Jersey Trade Secret Registry Numbers: 679485-5078P, 679485-6419P, 679485-6421P, 679485-5000P, 679485-6420P.

16 OTHER INFORMATON

PREPARED BY	William J. Meyers	DATE	07-14-94
TITLE	Product Safety Specialist	LAST REVISED	06/30/94

CHEMICAL EMERGENCY TELEPHONE (CHEMTREC) 1-800-424-9300

All information, recommendations, and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Henkel Corporation as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Henkel Corporation assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

Henkel

Henkel Corporation

300 BROOKSIDE AVENUE
AMBLER, PENNSYLVANIA 19002

MATERIAL SAFETY DATA SHEET

CUSTOMER #

1 PRODUCT INFORMATION

PRODUCT TRADE NAME FOAMASTER® DF-177F

SYNONYMS Trade Secret

HEALTH 1 FLAMMABILITY 1 REACTIVITY 0

National Fire Protection Association (NFPA) Rating

HEALTH 1 FLAMMABILITY 1 REACTIVITY 0

Hazardous Materials Identification System (HMIS) Rating

This Material Safety Data Sheet complies with 29 CFR 1910.1200 OSHA Hazard Communication Standard

TELEPHONE NUMBER 215/628-1000 EMERGENCY NUMBER 215/628-1000

2 COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD DATA	
Trade secret ingredients	Trade Secret	100	PEL:	None established
			TLV:	None established

LISTED AS CARCINOGEN BY: IARC NO NTP NO OSHA NO ACGIH NO OTHER NO

PEL = OSHA Permissible Exposure Limit TLV = ACGIH Threshold Limit

STEL = Short Term Exposure Limit TWA = Time Weighted Average

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Light yellow viscous liquid with slight odor. May cause mild transient skin and eye irritation.

POTENTIAL HEALTH EFFECTS

ROUTES OF EXPOSURE

INHALATION

No hazard expected under ordinary conditions of use. Prolonged or repeated exposure to vapors generated at high temperatures may result in irritation of the respiratory tract and inhalation of harmful amounts.

SKIN CONTACT

May cause minimal irritation.

SKIN ABSORPTION

Considered practically non-toxic.

EYE CONTACT

Causes irritation.

INGESTION

Considered practically non-toxic. May cause nausea, vomiting and diarrhea.

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE

Possible skin, eye and respiratory tract irritation.

CHRONIC OVEREXPOSURE

No data.

4 FIRST AID MEASURES

EYES

Flush at once with large amounts of water for at least 15 minutes holding lids apart. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention.

SKIN

Wash thoroughly with soap and water, remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation should develop.

INHALATION

Remove to fresh air.

INGESTION

Do not induce vomiting. If vomiting should occur spontaneously, keep airway clear. Get medical attention. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN

None

5 FIRE FIGHTING MEASURES

FLASH POINT (Test Method) >200°F (93°C) PMCC AUTOIGNITION TEMPERATURE Not Available

FLAMMABLE LIMITS IN AIR, % by Volume LOWER Not Available UPPER Not Available

EXTINGUISHING MEDIA Water spray, carbon dioxide, foam and dry chemical.

UNUSUAL FIRE OR EXPLOSION HAZARDS

None

SPECIAL FIRE FIGHTING PROCEDURES

Cool exposed containers with water spray. Self-contained breathing apparatus in confined areas.

6 ACCIDENTAL RELEASE MEASURES

Stop leaks. Clean up large spills with vacuum truck. Soak up small spills with absorbent material and place in labeled waste container for disposal. Wear adequate personal protective clothing and equipment.

7 HANDLING AND STORAGE

PRECAUTIONARY STATEMENTS

CAUTION!
MAY CAUSE IRRITATION.
Avoid contact with eyes, skin, and clothing.
Avoid breathing mist or vapor.
Wear chemical splash goggles, gloves and protective clothing when handling.
Use with adequate ventilation and employ respiratory protection where mist or vapor may be generated.
Wash thoroughly after handling.
FOR INDUSTRIAL USE ONLY.

OTHER HANDLING & STORAGE REQUIREMENTS

Always mix well before using. Product may congeal or stratify if cold. Warm to 122°F (50°C) and mix well before using.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENTS	Local exhaust ventilation recommended.
PERSONAL PROTECTIVE EQUIPMENT	
EYE PROTECTION	Chemical splash goggles or face shield.
SKIN PROTECTION	Rubber or plastic gloves.
RESPIRATORY PROTECTION	None required under normal conditions of use. NIOSH/MSHA approved respirator if necessary. Follow manufacturer's recommendations.
OTHER REQUIRED EQUIPMENT	Standard work clothing and work shoes.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Clear light yellow slightly viscous liquid

ODOR
Slight

SPECIFIC GRAVITY (Water = 1)
0.986

VAPOR PRESSURE
Not Available

VAPOR DENSITY (Air = 1)
Not Available

EVAPORATION RATE (Butyl Acetate = 1)
Not Available

DENSITY @ 20°C
8.2 lb/gal

SOLUBILITY IN WATER, % BY Weight
Poor unstable emulsions

pH
2% (10:6 IPA:H2O) : 6.8

BOILING POINT (760 mm Hg)
Not Available

FREEZING POINT
Not Available

MELTING POINT
Not Applicable

VISCOSITY
260 SUS at 100°F

% VOLATILES BY WEIGHT
6.0 as VOC (EPA Test Method 24)

10 STABILITY AND REACTIVITY

STABLE [X] **UNSTABLE** [ ]

CONDITIONS TO AVOID
None

INCOMPATIBLE MATERIALS
Strong oxidizing agents.

HAZARDOUS POLYMERIZATION **WILL OCCUR** [ ]
WILL NOT OCCUR [X]

CONDITIONS TO AVOID
None

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon dioxide and carbon monoxide.

11 TOXICOLOGICAL INFORMATION

Acute oral LD50 = 15 g/kg (rat)
Acute dermal LD50 = >20 g/kg (rabbit)

12 ECOLOGICAL INFORMATION

BOD5: gm O2/gm = 0.0217
COD: gm O2/gm = 1.550
% Biodegradable = 1.4

13 DISPOSAL CONSIDERATIONS

Dispose of product by incineration in an approved chemical waste facility (or by other approved methods) in accordance with applicable Federal, State and local regulations. Avoid landfilling liquids. Since emptied container retains product residue all labeled hazard precautions must be observed.

14 TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME	Non-hazardous

15 REGULATORY INFORMATION

NOTICE: This product does not contain any ingredients subject to the reporting requirements of SARA Title III, Section 313 (40 CFR Part 372).

SARA Section 311/312: Not Applicable.

TSCA: Components found in TSCA Inventory.

New Jersey Trade Secret Registry Number: 679485-5053P.

16 OTHER INFORMATION

PREPARED BY	William J. Meyers	DATE	12-16-94
TITLE	Product Safety Specialist	LAST REVISED	10/25/94

CHEMICAL EMERGENCY TELEPHONE (CHEMTREC) 1-800-424-9300

All information, recommendations, and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Henkel Corporation as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Henkel Corporation assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

Rec'd 5-6-94

MATERIAL SAFETY DATA SHEET

BLEACH

SECTION I - IDENTIFICATION

MANUFACTURER'S NAME..... Haviland Products Company
ADDRESS (STREET,CITY,STATE,ZIP) 421 Ann St., N.W., Grand Rapids, MI 49504
PHONE NUMBER..... (616) 361-6691
EMERGENCY PHONE NUMBER..... CHEMTREC (800) 424-9300
EFFECTIVE DATE..... 8/24/89
TRADE NAME..... BLEACH
CHEMICAL FAMILY..... Hypochlorite

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	OSHA/PEL	ACGIH/TLV (Units)	PROD. CAS #
Sodium Hypochlorite	Not Established	Not Established	7681-52-9

SECTION III - PHYSICAL DATA

BOILING POINT..... 230°F (110°C)
FREEZING POINT ..... -20 TO -30° F
VAPOR PRESSURE (mm Hg)..... 14.5 @ 20°C
VAPOR DENSITY (Air=1)..... No Information Available
SOLUBILITY IN H2O..... Completely
APPEARANCE/ODOR..... Light Yellow-Green Liquid; Pungent Chlorine-like Odor
SPECIFIC GRAVITY (H2O=1)..... 1.14-1.21
PH..... Not Established

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT..... Not Flammable
LOWER EXPLOSIVE LIMIT (% by Volume) Not Applicable
UPPER EXPLOSIVE LIMIT (% by Volume) Not Applicable
EXTINGUISH MEDIA..... As for Surrounding Fires
SPECIAL FIRE FIGHTING PROCEDURES... Wear self-contained breathing apparatus where this material is involved in a fire.
UNUSUAL FIRE HAZARD..... Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents may result in a fire.

SECTION V - HEALTH HAZARD DATA

MATERIAL SAFETY DATA SHEET

BLEACH

CARCINOGENICITY.....	None
NTP.....	No
IARC.....	No
OVER EXPOSURE EFFECTS.....	Redness of exposed tissues; irritation effects increase with strength of solution and time of exposure; constant eye and throat irritation.
PRIMARY ROUTE(S) OF ENTRY.....	Inhalation; Eye and Skin Contact
FIRST AID PROCEDURES.....	If inhaled: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention. Ingestion: Do not induce vomiting. Call a Physician Immediately. In case of eye contact: Flush immediately with plenty of water for at least 15 minutes, holding eyelids apart and get medical attention immediately; for skin, wash thoroughly with soap and water; wash contaminated clothing before reuse.
EXPOSURE AGGRAVATED MEDICAL CONDITIONS	None Currently Known

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY.....	Stable
CONDITIONS TO AVOID.....	Heat, light exposure, heavy metal contamination.
INCOMPATIBLE MATERIALS.....	Heavy metals (act as catalysts), reducing agents, organics, ethers, ammonia, acids.
DECOMPOSITION PRODUCTS.....	Hypochlorous acid, chlorine, hydrochloric acid.
HAZARDOUS POLYMERIZATION.....	Will Not Occur
POLYMERIZATION AVOID.....	Not Applicable

SECTION VII - SPILL OR LEAK PROCEDURE

FOR SPILL	Contain spill. Flush with water to waste treatment system. Neutralize with reducing agents such as bisulfites or ferrous salt solutions.
WASTE DISPOSAL METHOD.....	Reduce with bisulfites or ferrous salt solutions. Keep alkaline and dilute with water. Comply with all federal, state and local regulations.

SECTION VIII - SPECIAL PROTECTION

MATERIAL SAFETY DATA SHEET

BLEACH

RESPIRATORY PROTECTION.....	NIOSH approved respirator with acid type canister.
VENTILATION.....	Not required for normal handling.
PROTECTIVE GLOVES.....	Rubber or other impervious materials.
EYE PROTECTION.....	Chemical splash proof goggles.
OTHER PROTECTIVE EQUIPMENT....	A safety shower and eye bath should be available. For operations where spills or splashing may occur, use an impervious body covering and boots.
HANDLING AND STORAGE.....	Store in vented, closed, clean, non-corrosive containers in a cool, dray area away from direct sunlight. Keep containers closed when not in use. Emptied containers retain product residue.

SECTION IX - SPECIAL PRECAUTIONS

HAZARD CLASS.....	Corrosive Material
DOT SHIPPING NAME.....	Hypochlorite Solution
UN NUMBER.....	UN1791
REPORTABLE QUANTITY (RQ).....	1,000 lbs.

REFERENCES BLEACH

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION VI - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:
Severe respiratory tract irritatn. may occur.Severe burns to skin. severe burns to eyes, redness, blurring vision. Harmful or fatal if swallowed. Corrosive vapor harmful. May cause damage to kidneys/blood/nerves/liver/lungs. May cause inflamation of nose & throat. Prolonged skin contact may cause albuminuria or hematuria.

PRIMARY ROUTE(S) OF ENTRY: DERMAL INHALATION INGESTION EYES

MEDICAL CONDITIONS PRONE TO OVEREXPOSURE:
Liquid causes severe skin & eye burns - wash thoroughly after handling. Severe burns to skin, defatting, dermatitis - corrosive!

TARGET ORGANS AFFECTED:
Kidneys, blood, nerves, liver & lungs.

CARCINOGENICITY:
None of the components in this chemical are listed by IARC, NTP or OSHA as a carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:
Call a physician. Harmful or fatal if swallowed. Poison! EYES: Flush with plenty of water for 30 minutes. Remove to fresh air. INGESTION: Do no induce vomiting. Give large amounts of water & one ounce of milk of magnesia.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Neutralize with soda ash & dilute with plenty of water. If laws permit flush to sewer. Stop spill at source. Dike area & contain. Pump liquid to salvage tank. Remainder may be taken up on absorbent material & shoveled into containers.

WASTE DISPOSAL METHOD:
SMALL: Evaporate until all vapors are gone. Dispose or remainder by legally applicable methods. LARGE: Recycle or neutralize with soda ash & dilute with plenty of water. If laws permit, flush to sewer observing local, state & federal health, safety & pollution laws.

Q-V-ETCH
DL2050

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION:
Use a NIOSH approved respirator if necessary.

VENTILATION:
VENTILATION: Local Exhaust: Necessary
Mechanical (General): Acceptable

PROTECTIVE GLOVES:
PLASTIC OR RUBBER GLOVES ARE RECOMMENDED.

EYE PROTECTION:
SAFETY GLASSES OR GOGGLES ARE RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:
EYE WASH STATION AND SHOWER SHOULD BE AVAILABLE FOR EMERGENCY USE.

HYGENIC PRACTICES:
Wash hands before eating or using the washroom. Smoke --- in SMOKING AREAS O N L Y .

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Keep away from heat, sparks, or open flame. Store at temperatures below 120 degrees fahrenheit.

OTHER PRECAUTIONS:
READ ENTIRE LABEL BEFORE USING.

SECTION X - OTHER INFORMATION

-----NFPA INDEX-----

HEALTH	3
FLAMMABILITY	0
REACTIVITY	0

PREPARED BY: Guy S. Zobec
Drummond American Corporation
600 Corporate Woods Parkway
Vernon Hills, Illinois 60061

TLV	Threshold Limit Value	ND	No Data	--NFPA HAZARD INDEX--	
PEL	Permissible Exposure Level	LEL	Lower Explosive Level	SEVERE HAZARD	4
NFPA	National Fire Protection Association	NE	Not Established	SERIOUS HAZARD	3
CAS	Chemical Abstract Service	PPM	Parts Per Million	MODERATE HAZARD	2
NTP	National Toxicology Program	D.O.T.	Department of Transportation	SLIGHT HAZARD	1
OSHA	Occupational Safety and Health Admin.	N/A	Not Applicable	MINIMAL HAZARD	0
IARC	International Agency for Research on Cancer	M^3	Approximate milligrams of substance per cubic meter of air		
STEL	Short Term Exposure Limit, duration is for 15 minutes				

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

MANUFACTURED FOR:

Drummond American Corporation
600 Corporate Woods Pkwy.
Vernon Hills, Illinois 60061

IN CASE OF EMERGENCY CALL:

ROCKY MOUNTAIN POISON & DRUG CENTER
COLLECT AT: (303) 623-5716

DATE OF PREPARATION:
05/01/94

INFORMATION TELEPHONE NUMBER:
~~(708)~~ 847 913-9313

SECTION I - IDENTITY

PRODUCT NUMBER DL2050
PRODUCT NAME Q-V-ETCH
PRODUCT CLASS DISINFECTANTS

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

INGREDIENT	CAS NUMBER	%	ACGIH TLV PPM	MG/M^3	PEL PPM	STEL PPM
HYDROCHLORIC ACID *	7647-01-0		5	7.5	5.00	ND

* THIS CHEMICAL IS SUBJECT TO S.A.R.A TITLE III SECTION 313 REPORTING

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT (degrees F): 213

VAPOR DENSITY: Heavier than air.

EVAPORATION RATE: Slower than ether.

PERCENT VOLATILE (By Weight): N/A WEIGHT PER GALLON (LBS): 9.37

OPTIONAL INFORMATION:
Appearance/Odor: clear, pale yellow/green liquid with a mild odor.
Specific Gravity: 1.124 Soluble in water: complete.
Evaporation Rate (Ether=1): long. Vapor Pressure (mm.Hg): 15.3 @20C

Q-V-ETCH
DL2050

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION:
OSHA CLASS N/A
DOT CLASS COR

U.N. CLASSIFICATION:
PER DOT NA1789
PER IMCO ND

FLASH POINT: N/A

LEL: N/A

UEL: N/A

METHOD: Tag Open Cup

EXTINGUISHING MEDIA:
DRY CHEMICAL SAND

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Acid fumes react with most common metals to produce hydrogen gas which can be a fire and explosion hazard.

SPECIAL FIREFIGHTING PROCEDURES:
Hydrogen chloride is released, when product is heated.
Use a gas mask.

SECTION V - REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon monoxide, carbon dioxide.

CONDITIONS TO AVOID:
Open flame, strong oxidizers and heat.

INCOMPATIBILITY (MATERIALS TO AVOID):
Isolate from alkalis, amines and non-resistant metals.

.O.T. EMERGENCY RESPONSE INFORMATION:

COMPOUNDS, CLEANING LIQUID

Olin MATERIAL SAFETY DATA

OCEAN[SM] Network
EMERGENCY PHONE 1-800-OLIN-911

SECTION I - IDENTIFICATION

CHEMICAL NAME & SYNONYMS Sodium Hydroxide - Flake Caustic Soda		
CHEMICAL FAMILY Alkali	FORMULA NaOH	TRADE NAME Caustic Soda - Flake
DESCRIPTION White deliquescent flakes		CAS NO. 1310-73-2

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not get in eyes, on skin or on clothing. Do not take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing dust. Store in a cool, dry, well-ventilated place. Protect against moisture and water. Separate from acids, explosive, organic peroxides and easily ignitible materials.

PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS
EYES Goggles or face shield GLOVES Neoprene, rubber, buna-N OTHER Coveralls, impervious footwear	As required to keep airborne concentrations below the TLV.

RECEIVED
DATE 12-13-85
INITIALS ja - ok

SECTION III - HAZARDOUS INGREDIENTS

BASIC MATERIAL	OSHA PEL	LD50	LC50	SIGNIFICANT EFFECTS
Sodium Hydroxide	2 mg/m3	No data	No data	Rapid destruction to all tissues contacted

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT METHOD Not applicable	OSHA CLASSIFICATION Non-combustible solid	FLAMMABLE EXPLOSIVE LIMIT	LOWER N.D.	UPPER N.D.

EXTINGUISHING MEDIA Non-combustible - Choose extinguishing media suitable for surrounding materials.

SPECIAL FIRE HAZARD & FIRE FIGHTING PROCEDURES Use NIOSH/MSHA approved self-contained breathing apparatus where this material is involved in a fire.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
Ceiling value 2 mg/m3 (ACGIH 1985-86)

SYMPTOMS OF OVER EXPOSURE
Rapid destruction of any tissue contacted

EMERGENCY FIRST-AID PROCEDURES

SKIN Flush with water for 15 minutes, call a physician.

EYES Flush with water for 15 minutes, call a physician.

INGESTION Drink large quantities of water. Do not induce vomiting. Call a physician.

PRODUCT CODE 118717 CHEMICAL NAME Caustic Soda - Flake

SECTION VI - TOXICOLOGY (PRODUCT)

ACUTE ORAL LD 50
No data
ACUTE DERMAL LD 50
No data
ACUTE INHALATION LC 50
No data

CARCINOGENICITY No available data
MUTAGENICITY No available data
EYE IRRITATION Produces severe burns
PRIMARY SKIN IRRITATION
Corrosive

PRINCIPAL ROUTES OF ABSORPTION
Inhalation, skin contact

EFFECTS OF ACUTE EXPOSURE Corrosion of exposed tissues resulting in burns and frequently deep ulcerations.

EFFECTS OF CHRONIC EXPOSURE
None except those secondary to tissue damage.

SECTION VII - SPILL AND LEAKAGE PROCEDURES (CONTROL PROCEDURES)

ACTION FOR MATERIAL RELEASE OR SPILL
Wear NIOSH/MSHA approved dust/mist respirator. Follow OSHA regulations for respirator use (see 29 CFR 1910.134). Wear goggles, coveralls and neoprene, rubber, Buna-N or butyl rubber gloves and boots. SHovel or sweep up and place in an approved DOT container and seal. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.

TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

WASTE DISPOSAL METHOD
Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate Federal, State and local regulatory agencies to ascertain proper disposal procedures.

SECTION VIII - SHIPPING DATA

D.O.T. Sodium Hydroxide Solid Corrosive Material UN 1823

SECTION IX - REACTIVITY DATA

STABLE X UNSTABLE AT____C ____ F	HAZARDOUS POLYMERIZATION	MAY OCCUR / WILL NOT OCCUR X

CONDITIONS TO AVOID Material is non-combustible, but upon contact with moisture or water may generate sufficient heat to ignite combustible materials.
INCOMPATIBILITY(MATERIAL TO AVOID) Carbon monoxide may be released in enclosed food product vessels. Strong acids, many nitro-compounds.
HAZARDOUS DECOMPOSITION PRODUCTS
None known

SECTION X - PHYSICAL DATA

MELTING POINT 318°C	VAPOR PRESSURE 1mmHg @739°C	VOLATILES N.A.
BOILING POINT 1390° C	SOLUBILITY IN WATER 42% @0°C	EVAPORATION RATE N.A.
SPECIFIC GRAVITY(H2O=1) 2.130	PH 13	VAPOR DENSITY(AIR=1) N.A.

INFORMATION: FURNISHED TO 52606001 FURNISHED BY DATE DECEMBER 2, 1985

ATTN: DEPT HANDLING MATL SAFETY DATA SHEETS
HAVILAND PRODUCTS CO
421 ANN STREET N W
GRAND RAPIDS MI 49502

Department of Environmental Hygiene and Toxicology
(203) 789-5436
781-

Olin CORPORATION
120 Long Ridge Road, Stamford, Connecticut 06904
OCEAN℠ Network

BETZ INDUSTRIAL DIV.
1 QUALITY WAY, TREVOSE, PA.19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) (800)877-1940
EFFECTIVE DATE 09-30-91

Product: BETZ KI-2 PRINTED:
REVISIONS TO SECTIONS: 1;EDIT:2

PRODUCT APPLICATION : LIQUID ION EXCHANGE RESIN CLEANER.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

CITRIC ACID***CAS#77-92-9;EYE IRRITANT;PEL/TLV:NONE.

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: 5% SOL. (APPROX.) 2.0 ODOR: PUNGENT,VINEGAR-LIKE
FL.PT.(DEG.F): 200 SETA(CC) SP.GR.(70F)OR DENSITY: 1.187
VAPOR PRESSURE(mmHG): 18 VAPOR DENSITY(AIR=1): 1
VISC cps70F: 10 %SOLUBILITY(WATER): 100
EVAP.RATE: 1 ETHER=1 APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID FREEZE POINT(DEG.F): 18

-----SECTION 3----------REACTIVITY DATA----------

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***
MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL/CO2/FOAM OR WATER. SLIPPERY CONDITION. USE SAND/GRIT

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING

HANDLING INSTRUCTIONS***

ACIDIC.DO NOT MIX WITH ALKALINE MATERIAL.

****

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002=CORROSIVE(PH)

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ACID ; PE - B

BETZ
Trevose, PA 19053-6783 (215)355-3300

Material Safety Data Shee

Emergency Telephone
Health/Accident (800)877-1940

PRODUCT:SULFITE 3

EFFECTIVE DATE:06-06-95

REVISIONS TO SECTIONS: 1,7;EDIT:2,8

PRODUCT APPLICATION:WATER BASED DISSOLVED OXYGEN SCAVENGER.

1) HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS,HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

SODIUM BISULFITE***CAS# 7631-90-5; IRRITANT;SKIN AND RESPIRATORY SENSITIZER;MAY BE CORROSIVE IN AQUEOUS SOLUTIONS;MAY GENERATE SO2; PEL:5MG/M3;TLV:5MG/M3

2) TYPICAL PHYSICAL DATA

PH: AS IS(APPROX.) 4.1	ODOR: STRONG
FL.PT.(DEG.F):> 200 P-M(CC)	SP.GR.(70F): 1.261
VAPOR PRESSURE(mmHG): ~ 18.0	VAPOR DENSITY(AIR=1): < 1.00
VISC cps70F: 7	%SOLUBILITY(WATER): 100.0
EVAP RATE: < 1.00(ETHER=1)	APPEARANCE: PINK
PHYSICAL STATE:LIQUID	FREEZE POINT(DEG.F): 18.00

3) REACTIVITY DATA

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

4) HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MAY CAUSE SLIGHT IRRITATION TO THE SKIN.SKIN SENSITIZER.
ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES
ACUTE RESPIRATORY EFFECTS ***
MAY CAUSE IRRITATION TO MUCOUS MEMBRANES;REPEATED EXPOSURE MAY RESULT IN RESPIRATORY SENSITIZATION.
CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED CONTACT MAY CAUSE PRIMARY IRRITANT DERMATITIS,SKIN SENSITIZATION AND/OR ALLERGIC RESPIRATORY REACTIONS
MEDICAL CONDITIONS AGGRAVATED ***
ASTHMA
SYMPTOMS OF EXPOSURE ***
MAY CAUSE LOCAL IRRITATION OR A SENSITIZATION REACTION UPON DIRECT CONTACT WITH SKIN OR RESPIRATORY TRACT.

5) FIRST AID INSTRUCTIONS

SKIN CONTACT ***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES
EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT
INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY
INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

6) SPILL,DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS***
VENTILATE,AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER.THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.
DISPOSAL INSTRUCTIONS****
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL
FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

7) SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134.USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE RESPIRATOR WITH ACID GASSES CARTRIDGES AND DUST/MIST PREFILTERS
RECOMMENDED SKIN PROTECTION***
GAUNTLET-TYPE NEOPRENE GLOVES,CHEMICAL RESISTANT APRON
WASH OFF AFTER EACH USE REPLACE AS NECESSARY.
RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES.FACE SHIELD

8) STORAGE AND HANDLING PRECAUTIONS

STORAGE INSTRUCTIONS***
KEEP CONTAINERS CLOSED WHEN NOT IN USE.
REASONABLE AND SAFE CHEMICAL STORAGE.PROTECT FROM FREEZING
HANDLING INSTRUCTIONS***
VENT CAREFULLY BEFORE OPENING.SULFUR DIOXIDE CAN BE FORMED DURING THE NORMAL USE AND HANDLING OF THIS PRODUCT.
****
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD
****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
387 GALLONS DUE TO COBALT CHLORIDE;1,443 GALLONS DUE TO SODIUM BISULFITE;
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS:NOT APPLICABLE
...DOT HAZARD/UN#/ER GUIDE# IS :ORS (WHEN CONTAINER > RQ)/NA3082/#31
...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 302 CHEMICALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 313 CHEMICALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 312 HAZARD CLASS:IMMEDIATE(ACUTE);DELAYED(CHRONIC)
...MICHIGAN CRITICAL MATERIALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
NFPA/HMIS : HEALTH - 2; FIRE - 1; REACTIVITY - 0; SPECIAL - NONE; PE - D

U. S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

REFERENCE FORM OSHA 20 (Revised May 1972)

SECTION I - IDENTIFICATION

MANUFACTUER'S NAME: **MISSISSIPPI LIME COMPANY**
ADDRESS: P. O. DRAWER 31, STE. GENEVIEVE, MO. 63670
TELEPHONE: 314-883-5731

PRODUCT: **HYDRATED LIME**

CHEMICAL NAME: CALCIUM HYDROXIDE	CHEMICAL FAMILY: ALKALI EARTH
CHEMICAL FORMULA: $Ca(OH)_2$	MOLECULAR WEIGHT: 74.10
CAS NAME: CALCIUM HYDROXIDE	CAS NUMBER: 1305-62-0

SYNONYMS: CALCIUM HYDROXIDE - HYDRATED LIME - SLAKED LIME

PARTMENT OF ANSPORTATION:
SHIPPING NAME: HYDRATED LIME
HAZARD CLASSIFICATION: NONE

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS		%	TLV (Units)	ALLOYS AND METALLIC COATINGS		%	TLV (Units)
PIGMENTS	NA			BASE METAL	NA		
CATALYST	NA			ALLOYS	NA		
VEHICLE	NA			METALLIC COATINGS	NA		
SOLVENTS	NA			FILLER METAL PLUS COATING OR CORE FLUX	NA		
ADDITIVES	NA			OTHERS	NA		
OTHERS	NA				NA		

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
NA		

SECTION III - PHYSICAL DATA

BOILING POINT (°F) (Decomposes)	1076	SPECIFIC GRAVITY (H_2O = 1)	2 2
POR PRESSURE (mm Hg)	NA	PERCENT. VOLATILE BY VOLUME (%)	NA
VAPOR DENSITY (Air = 1)	NA	EVAPORATION RATE (= 1)	NA
SOLUBILITY IN WATER	0.185% at 0°C -- 0.077% at 100°C		
APPEARANCE AND ODOR	WHITE POWDER — NO ODOR		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used): NA	FLAMMABLE LIMITS: NA	LEL	UEL
EXTINGUISHING MEDIA: NOT FLAMMABLE OR EXPLOSIVE			
SPECIAL FIRE FIGHTING PROCEDURES: NA			
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA			

SECTION V - HEALTH HAZARD DATA

IRESHOLD LIMIT VALUE: 5 MILLIGRAMS PER CUBIC METER OF AIR. (AMERICAN CONFERENCE OF GOVERNMENT HYGENISTS - 1973)

UNDER FEDERAL HAZARDOUS SUBSTANCES LABELING ACT, THE SIGNAL WORD FOR HYDRATED LIME IS **"CAUTION"**.

PRECUATIONS AND FIRST AID PROCEDURES: PROLONGED CONTACT WITH SKIN MAY CAUSE BURNS OR IRRITATION. CLEAN THOROUGHLY WITH WATER. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION. AVOID CONTACT WITH EYES — WEAR GOGGLES. IN CASE OF CONTACT WITH EYES, FLUSH THOROUGHLY WITH WATER AND GET **IMMEDIATE** MEDICAL ATTENTION. KEEP OUT OF THE REACH OF CHILDREN.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	YES	CONDITIONS TO AVOID: CONTACT WITH ACIDS OR CO_2
	STABLE	YES	IN AIRTIGHT CONTAINERS
INCOMPATABILITY (*Materials to avoid*): ACIDS			
HAZARDOUS DECOMPOSITION PRODUCTS: NONE			
ZARDOUS LYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID:
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	NORMAL CLEAN-UP PROCEDURES, USING PRECAUTIONS SUGGESTED IN SECTIONS IV, V, VIII.
WASTE DISPOSAL METHOD	MAY BE SALVAGED FOR NORMAL USE, MAY BE USED FOR NEUTRALIZING WASTE ACIDS, OR MAY BE REMOVED TO WASTE DUMP.

SECTION VIII - SPECIAL PROTECTION INFORMATION

VENTILATION	LOCAL EXHAUST: NA	SPECIAL: NA
	MECHANICAL: APPLY ADEQUATE VENTILATION TO INSURE DUST CONCENTRATION UNDER THRESHOLD LIMIT VALUE.	
RESPIRATORY:	PROTECTIVE FILTER MASK IN DUSTY ENVIRONMENT	
EYES:	WELL FITTED SAFETY GOGGLES	
GLOVES:	YES, FOR MANUAL HANDLING	
OTHER:	LONG SLEEVE SHIRT WITH BUTTONED COLLAR, LONG PANTS EXTENDING OVER WORK SHOES, PROTECTIVE CREAM OVER EXPOSED SKIN.	

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:	KEEP AWAY FROM CO_2 AND ACIDS. USE PRECAUTIONS LISTED ABOVE.

BETZ INDUSTRIAL DIV.
1 QUALITY WAY, TREVOSE, PA.19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) (800)877-1940
EFFECTIVE DATE 02-16-91

Product: REMOSIL PRINTED:
REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : POWDERED SILICA REMOVAL AGENT.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

MAGNESIUM OXIDE***CAS#1309-48-4;NUISANCE PARTICULATE;POTENTIAL IRRITANT; PEL/TLV:10MG/M3(FUME).

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: 5% DISP. (APPROX.) 10.2
ODOR: NONE
FL.PT.(DEG.F): NA
SP.GR.(70F)OR DENSITY: 24 LBS/CU.FT.
VAPOR PRESSURE(mmHG): NA
VAPOR DENSITY(AIR=1): NA
VISC cps70F: NA
%SOLUBILITY(WATER): 0
EVAP.RATE: NA WATER=1
APPEARANCE: WHITE
PHYSICAL STATE: POWDER
FREEZE POINT(DEG.F): NA

-----SECTION 3----------REACTIVITY DATA----------

STABLE. BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS ***
SLIGHTLY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***
MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE
DUSTS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
INHALATION OF DUST AND/OR VAPORS MAY CAUSE EYE,NOSE,THROAT AND RESPIRATORY TRACT IRRITATION.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DILUTE CONTENTS OF STOMACH.INDUCE VOMITING BY ONE OF THE STANDARD METHODS.IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN DUST CONCENTRATIONS BELOW THE EXPOSURE LIMIT OF 10MG/M3(PEL/TLV) FOR NUISANCE DUSTS.

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

AIRTIGHT CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

KEEP DRY

HANDLING INSTRUCTIONS***

NORMAL CHEMICAL HANDLING

****

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE)

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 1 ; FIRE - 0 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

BETZ LABORATORIES,INC.
4636 SOMERTON ROAD, TREVOSE, PA 19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

(PAGE 1 OF 3)

.:1 BETZ FUEL-SOLV FS-22 # EFFECTIVE DATE:02-03-95
PRINTED: 02-03-95
REVISIONS TO SECTIONS: 1,APP

.. APPLICATION:FUEL TREATMENT
. TION 1----------HAZARDOUS INGREDIENTS----------

:IATION ON PHYSICAL HAZARDS,HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC
.CT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS
: REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE
·IRONIC HAZARDS OF THIS FORMULATION.

.LEUM DISTILLATE***CAS# 64741-67-9;COMBUSTIBLE;IRRITANT (EYES);
·:0PPM;TLV:NOT DETERMINED; NOTE-(MFG.SUGGESTED EXPOSURE LIMIT 100PPM)

.IATIC SOLVENTS,PREMIUM***CAS# 64742-94-5;COMBUSTIBLE LIQUID;EYE
TANT; PEL:NOT DETERMINED;TLV:NOT DETERMINED; NOTE-MANUFACTURER'S
·MMENDED EXPOSURE LIMIT:100PPM.
ROLEUM DISTILLATES,HYDROTREATED HEAVY PARAFFINIC***CAS# 64742-54-7;
NTIAL IRRITANT; PEL:5 MG/M3(OIL MIST);TLV:5 MG/M3(OIL MIST)

OLEUM DISTILLATES,SOLVENT DEWAXED HEAVY PARAFFINIC***CAS# 64742-65-0;
ANCE OIL MIST; PEL:5MG/M3(MIST);TLV:5MG/M3(MIST)

HALENE***CAS# 91-20-3; IRRITANT;ABSORBED;SENSITIZER;TOXIC TO
KIDNEY,BLOOD;PEL:10PPM;TLV:10PPM

·TION 2----------TYPICAL PHYSICAL DATA----------
·5 EXTRACT(APPROX.) 3.8 ODOR: HYDROCARBON
DEG F): 167 SETA(CC) SP.GR.(70F): 0.904
PRESSURE(mmHG): < 10.0 VAPOR DENSITY(AIR=1): > 1.00
.70F. 58 %SOLUBILITY(WATER): 0.0
TE: · 1.00(ETHER=1) APPEARANCE: DARK BROWN
AL STATE:LIQUID FREEZE POINT(DEG.F): < -30.00
·TION 3----------REACTIVITY DATA----------

MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK
OUT CATEGORY 'B'

.. DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

BETZ FUEL-SOLV FS-22

TION 4--------HEALTH HAZARD EFFECTS----------

SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

AUSE MODERATE IRRITATION TO THE SKIN.MAY CAUSE DERMATITIS.

EYE EFFECTS ***

IRRITANT TO THE EYES

RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE

RS GASES,MISTS OR AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY

PROLONGED EXPOSURE MAY CAUSE DIZZINESS AND HEADACHE.

EFFECTS OF OVEREXPOSURE***

LONGED OR REPEATED EXPOSURES MAY CAUSE DEFATTING-TYPE DERMATITIS.

CONDITIONS AGGRAVATED ***

KNOWN

TOMS OF EXPOSURE ***

SSIVE DERMAL EXPOSURE CAUSES DEFATTING AND DRYING OF SKIN;EXCESSIVE

ATION OF VAPORS CAUSES DIZZINESS,HEADACHE AND NAUSEA.

TION 5 ---------FIRST AID INSTRUCTIONS----------

NTACT ***

VE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF

SOLUTION OR WATER FOR 15 MINUTES

NTACT***

DIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A

CIAN FOR ADDITIONAL TREATMENT

ON EXPOSURE***

VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE

AID TREATMENT AS NECESSARY

ON***

FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM

INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF

ACH USING 3-4 GLASSES MILK OR WATER

TION 6---------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

NSTRUCTIONS***

LATE,AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB

SORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER.THE WASTE

ACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL

BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

SOURCES OF IGNITION

INSTRUCTIONS****

CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY

TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A

TED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

UCT(AS IS)-

RATE OR BURY IN APPROVED LANDFILL

TINGUISHING INSTRUCTIONS***

GHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING

ATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:

EMICAL/CO2/FOAM OR WATER. SLIPPERY CONDITION. USE SAND/GRIT

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

BETZ FUEL-SOLV FS-22

ION 7 - ------SPECIAL PROTECTIVE EQUIPMENT----------

ECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134.USE
ORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
TION PROTECTION***
ATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
NDED RESPIRATORY PROTECTION***
LATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.
NDED SKIN PROTECTION***
ENE GLOVES
AFTER EACH USE REPLACE AS NECESSARY.
NDED EYE PROTECTION***
PROOF CHEMICAL GOGGLES

ION 8- ---------STORAGE AND HANDLING PRECAUTIONS----------
INSTRUCTIONS***
CONTAINERS CLOSED WHEN NOT IN USE.
IN COOL VENTILATED LOCATION.STORE AWAY FROM OXIDIZERS
G INSTRUCTIONS***
USTIBLE. DO NOT USE AROUND SPARKS OR FLAMES. BOND CONTAINERS DURING
OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR ABOVE THE
T FLASH POINT.

****

WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

****

APPENDIX: REGULATORY INFORMATION

NTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE
E DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.
ANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
RTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
IONS DUE TO NAPHTHALENE; TREAT AS OIL SPILL
THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE
ATION NUMBER IS:NOT APPLICABLE
ARD/UN#/ER GUIDE# IS :COMBUSTIBLE LIQUID/NA1993/#27
RNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:
ATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
SECTION 302 CHEMICALS:
LATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
SECTION 313 CHEMICALS:; NAPHTHALENE(CAS# 91-20-3), 2.0-5.0%
SECTION 312 HAZARD CLASS:IMMEDIATE(ACUTE);DELAYED(CHRONIC);FIRE
CAN CRITICAL MATERIALS:; NAPHTHALENE(CAS# 91-20-3)
IS HEALTH - 2; FIRE - 2; REACTIVITY - 0; SPECIAL - NONE; PE - B

BETZ INDUSTRIAL DIV.
1 QUALITY WAY, TREVOSE, PA.19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) (800)877-1940
EFFECTIVE DATE 10-02-91

Product: BETZ FUEL-SOLV FS-538 PRINTED:
REVISIONS TO SECTIONS: 1;EDIT:8

PRODUCT APPLICATION : FUEL TREATMENT

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

MINERAL OIL(MILDLY SOLVENT-REFINED OR HYDROTREATED OILS)*** CAS#64742-30-9; POTENTIAL SKIN TUMORIGEN(BASED ON CHRONIC ANIMAL SKIN PAINTING STUDIES); PEL:5MG/M3;TLV:5MG/M3.
SULFONIC ACIDS PETROLEUM MAGNESIUM SALTS***CAS#61789-87-5;POSSIBLE LIVER TOXIN AT VERY HIGH DERMAL APPLICATIONS IN EXPERIMENTAL ANIMALS;PEL:NONE; TLV:NONE.
PROPRIETARY ORGANOBARIUM COMPOUND***CAS#PROPRIETARY;COMBUSTIBLE;POSSIBLE EYE AND SKIN IRRITANT;PEL:NONE;TLV:NONE.

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: 50% EXTRACT (APPROX.) 10.3	ODOR: HYDROCARBON
FL.PT.(DEG.F): 200 SETA(CC)	SP.GR.(70F)OR DENSITY: 1.121
VAPOR PRESSURE(mmHG): ND	VAPOR DENSITY(AIR=1): ND
VISC cps70F: 568	%SOLUBILITY(WATER): 0
EVAP.RATE: 1 ETHER=1	APPEARANCE: BROWN
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): -9

-----SECTION 3----------REACTIVITY DATA----------

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SLIGHTLY IRRITATING TO THE SKIN.MAY CAUSE DERMATITIS.

ACUTE EYE EFFECTS ***
SLIGHTLY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
VAPORS,GASES,MISTS AND/OR AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURES MAY CAUSE LIVER TOXICITY,MAY CAUSE REPRODUCTIVE SYSTEM TOXICITY,OR MAY CAUSE DEFATTING-TYPE DERMATITIS (THE MINERAL OIL,IN LIFETIME SKIN PAINTING STUDIES IN MICE,HAS PRODUCED SKIN TUMORS).

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
PROLONGED EXPOSURE MAY CAUSE DRYING AND CRACKING OF SKIN.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL/CO2/FOAM OR WATER. SLIPPERY CONDITION. USE SAND/GRIT

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.

RECOMMENDED SKIN PROTECTION***

NEOPRENE GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

REASONABLE AND SAFE CHEMICAL STORAGE

HANDLING INSTRUCTIONS***

ALKALINE.DO NOT MIX WITH ACIDIC MATERIAL.

****

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY

...CLEARANCE FOR POTABLE WATER USE:

APPROVED BY MASS. AS FUEL OIL ADDITIVE.

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

TREAT AS OIL SPILL

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D005=EP TOXIC(BARIUM)

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:

THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUS CANCER OR REPRODUCTIVE TOXICITY: MINERAL OIL(64742-30-9)

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: PROPRIETARY ORGANO BARIUM COMPOUND , 6.0-10.0%

...SARA SECTION 312 HAZARD CLASS: DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: PROPRIETARY ORGANO BARIUM COMPOUND ;

NFPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

BETZ

BETZ MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 04-MAR-1996
PRINTED DATE: 17-MAY-1996

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : POLYMER 1100

PRODUCT APPLICATION AREA: FLOCCULANT.

COMPANY ADDRESS:
Betz Water Management Group, Division Betz Laboratories,Inc.
200 Witmer Road, Horsham, PA 19044
Information phone number (215) - 773-6131

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

CONTINUED

3) HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Dusts may cause irritation to the upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: None; Appearance: White, Powder

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical/CO2/foam or water--Slippery condition; use sand/grit.

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:
Dusts may cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin.

CONTINUED

4) FIRST AID MEASURES

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical/CO2/foam or water--Slippery condition; use sand/grit.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:
> 200F P-M(CC)

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7) HANDLING AND STORAGE

HANDLING:
Normal chemical handling.

STORAGE:
Keep containers closed when not in use. Reasonable and safe chemical storage. Keep dry.

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

This product is not hazardous as defined by OSHA regulations.

ENGINEERING CONTROLS:
adequate ventilation
PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I
RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.
SKIN PROTECTION:
neoprene gloves-- Wash off after each use. Replace as necessary.
EYE PROTECTION:
airtight chemical goggles

9) PHYSICAL AND CHEMICAL PROPERTIES

Density	42.000 lb/cu.ft	Vapor Pressure (mmHG)	< 1.0
Freeze Point (F)	NA	Vapor Density (air=1)	< 1.00
Viscosity (cps 70F)	NA	% Solubility (water)	1.0

Odor	None	
Appearance	White	
Physical State	Powder	
Flash Point (F)	> 200	P-M(CC)
pH 5% Sol. (approx.)	7.0	
Evaporation Rate (Ether=1)	< 1.00	

NA = not applicable ND = not determined

CONTINUED

10) STABILITY AND REACTIVITY

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
BETZ INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"A"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>5,000 mg/kg
28 Day Oral RAT/DOG:	NEGATIVE
NOTE - Rat two-year feed: no adverse effects. Dog one-year feed: no adverse effects.	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Non-toxic at high dose levels	
Skin Irritation Score RABBIT:	NEGATIVE
Eye Irritation Score RABBIT:	SLIGHT
Skin Sensitization G.PIG:	NEGATIVE

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Rainbow Trout 72 Hour Static Screen

0% Mortality: 100 mg/L

Daphnia magna 48 Hour Static Screen

100% Mortality: 1000 mg/L
0% Mortality: 250 mg/L

Bluegill Sunfish 96 Hour Static Screen

0% Mortality: 300 mg/L

BIODEGRADATION

COD (mg/gm):	988
TOC (mg/gm):	303
BOD-5 (mg/gm):	1
BOD-28 (mg/gm):	22

CONTINUED

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14) TRANSPORT INFORMATION

DOT HAZARD:	Not Applicable
UN / NA NUMBER:	Not applicable
DOT EMERGENCY RESPONSE GUIDE #:	Not applicable

15) REGULATORY INFORMATION

TSCA:
All components of this product are listed in the TSCA inventory.
CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
No regulated constituent present at OSHA thresholds
SARA SECTION 312 HAZARD CLASS:
Product is non-hazardous under Section 311/312
SARA SECTION 302 CHEMICALS:
No regulated constituent present at OSHA thresholds
SARA SECTION 313 CHEMICALS:
No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16) OTHER INFORMATION

NFPA/HMIS	CODE TRANSLATION	
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	22-AUG-1995	REVISED FORMAT	** NEW **
	06-DEC-1995	11	22-AUG-1995
	04-MAR-1996	11	06-DEC-1995

BETZ
Trevose, PA 19053-6783 (215)355-3300

Material Safety Data Sheet

Emergency Telephone
Health/Accident (800)877-1940

PRODUCT:BETZ CORROGEN

EFFECTIVE DATE:05-06-94

REVISIONS TO SECTIONS: 7

PRODUCT APPLICATION:POWDERED OXYGEN SCAVENGER.

1) HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS,HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

SODIUM SULFITE***CAS# 7757-83-7; MODERATE SKIN AND EYE IRRITANT; PEL:NOT DETERMINED;TLV:NOT DETERMINED

2) TYPICAL PHYSICAL DATA

PH: 5% SOL.(APPROX.) 10.0	ODOR: NONE
FL.PT.(DEG.F):> 200 SETA(CC)	DENSITY:NO DATA
VAPOR PRESSURE(mmHG): < 0.1	VAPOR DENSITY(AIR=1): < 1.00
VISC cps70F: NA	%SOLUBILITY(WATER): 15.0
EVAP RATE: < 1.00(ETHER=1)	APPEARANCE: WHITE
PHYSICAL STATE:POWDER	FREEZE POINT(DEG.F): NA

3) REACTIVITY DATA

STABLE. BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

4) HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MAY CAUSE MODERATE IRRITATION TO THE SKIN. POTENTIAL SKIN SENSITIZER.MAY CAUSE DERMATITIS

ACUTE EYE EFFECTS ***
MAY CAUSE MODERATE IRRITATION TO THE EYES.

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE
DUSTS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURE MAY CAUSE PRIMARY IRRITANT DERMATITIS AND/OR SKIN SENSITIZATION.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN,TEARING AND PAIN IN EYES(DIRECT CONTACT);MAY CAUSE SEVERE ALLERGIC RESPONSES(HIVES,BRONCHOCONSTRICTION) IN HYPERSENSITIVE INDIVIDUALS.

5) FIRST AID INSTRUCTIONS

SKIN CONTACT ***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DILUTE CONTENTS OF STOMACH.INDUCE VOMITING BY ONE OF THE STANDARD METHODS.IMMEDIATELY CONTACT A PHYSICIAN

6) SPILL,DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER
SPILL RESIDUE MAY BE NEUTRALIZED WITH 3% HYDROGEN PEROXIDE SOLUTION

DISPOSAL INSTRUCTIONS****
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

7) SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134.USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***
ADEQUATE VENTILATION
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.
RECOMMENDED SKIN PROTECTION***
NEOPRENE GLOVES
WASH OFF AFTER EACH USE REPLACE AS NECESSARY.
RECOMMENDED EYE PROTECTION***
AIRTIGHT CHEMICAL GOGGLES

8) STORAGE AND HANDLING PRECAUTIONS

STORAGE INSTRUCTIONS***
KEEP CONTAINERS CLOSED WHEN NOT IN USE.
KEEP DRY
HANDLING INSTRUCTIONS***
NORMAL CHEMICAL HANDLING
****
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD
****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS:NOT APPLICABLE
...DOT HAZARD/UN#/ER GUIDE# IS : NOT APPLICABLE
...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 302 CHEMICALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 313 CHEMICALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
...SARA SECTION 312 HAZARD CLASS:IMMEDIATE(ACUTE);DELAYED(CHRONIC)
...MICHIGAN CRITICAL MATERIALS:
NO REGULATED CONSTITUENT PRESENT AT OSHA THRESHOLDS
NFPA/HMIS : HEALTH - 2; FIRE - 0; REACTIVITY - 0; SPECIAL - NONE; PE - B

Power Plant

Betz Laboratories, Inc.
4636 Somerton Road, Trevose, Pa. 19047
Betz Material Safety Data Sheet
24 Hour Emergency Telephone (Health or Accident) 215/355-3300

REAGENT : **HYDROCHLORIC ACID 2N** CODE 873 EFFECTIVE DATE 10-31-88
PRINTED: 12/20/88

REAGENT APPLICATION : FIELD TEST REAGENT

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC REAGENT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

HYDROCHLORIC ACID***CAS#7647-01-0;CORROSIVE;PEL:5 PPM;TLV:5 PPM (CEILING).

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 0.9	ODOR: PUNGENT
FL.PT.(DEG.F): ND	SP.GR.(70F)OR DENSITY: 1.080
VAPOR PRESSURE(mmHG): ND	VAPOR DENSITY(AIR=1): ND
VISC cps70F: ND	%SOLUBILITY(WATER): 100
EVAP.RATE: ND WATER=1	APPEARANCE: COLORLESS
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): ND

-----SECTION 3----------REACTIVITY DATA----------

STABLE

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

REAGENT: HYDROCHLORIC ACID 2N EFFECTIVE DATE 10-31-88

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SEVERE IRRITANT TO THE SKIN

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE
VAPORS,GASES,MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED CONTACT MAY CAUSE PRIMARY IRRITANT DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
INHALATION MAY CAUSE IRRITATION OF RESPIRATORY TRACT;SKIN CONTACT MAY CAUSE ITCHING AND/OR REDNESS.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***
GENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
SPECIFIC- DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
GENERAL-VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL,SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
SPECIFIC- FLUSH AREA WITH WATER.WET AREA MAY BE SLIPPERY.IF SO,SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***
GENERAL-WATER CONTAMINATED WITH THIS REAGENT MAY BE SENT TO A SANITARY SEWER,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
REAGENT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
GENERAL-FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

REAGENT: HYDROCHLORIC ACID 2N EFFECTIVE DATE 10-31-88

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT REAGENT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ACID GASSES CARTRIDGES AND DUST/MIST PREFILTERS

RECOMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***

KEEP CONTAINER CLOSED WHEN NOT IN USE.

PROTECT FROM FREEZING.IF FROZEN,THAW COMPLETELY AND MIX THOROUGHLY PRIOR TO USE

HANDLING INSTRUCTIONS***

IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE

ACIDIC.CORROSIVE TO SKIN AND EYES.DO NOT MIX WITH ALKALINE MATERIAL.

****

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD

HAROLD M. HERSH (ENVIROMENTAL INFORMATION COORDINATOR)

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002=CORROSIVE

...DOT HAZARD CLASSIFICATION: CORROSIVE TO STEEL

...DOT SHIPPING DESIGNATION IS: UN1789 HYDROCHLORIC ACID SOLUTION

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: HYDROCHLORIC ACID(7647-01-0) , 6.0-10.0% ;

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

NFPA/HMIS : HEALTH - 3 ; FIRE - 0 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - B

BETZ
Trevose, PA 19053-6783 (215)355-3300

Material Safety Data She

Emergency Telephone
Health/Accident (800)877-1940

PRODUCT:CHELANT CL-2

EFFECTIVE DATE:09-24-93

REVISIONS TO SECTIONS: 4,APP;EDIT:2,7,8

PRODUCT APPLICATION:WATER BASED INTERNAL BOILER TREATMENT CHEMICAL.

1) HAZARDOUS INGREDIENTS

INFORMATION ON PHYSICAL HAZARDS.HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

NITRILOTRIACETIC ACID,TRISODIUM SALT(NTA.3NA)***CAS# 5064-31-3; SUSPECT CARCINOGEN;PEL:NOT DETERMINED;TLV:NOT DETERMINED.

ETHYLENEDIAMINE TETRAACETIC ACID,TETRASODIUM SALT(EDTA.4NA)***CAS# 64-02-8; IRRITANT(SKIN);CORROSIVE(EYES); PEL:NOT DETERMINED;TLV:NOT DETERMINED

SODIUM HYDROXIDE(CAUSTIC SODA)***CAS# 1310-73-2; CORROSIVE;TOXIC(IF ORALLY INGESTED); PEL:2.0MG/M3;TLV:2.0MG/M3(CEILING).

2) TYPICAL PHYSICAL DATA

PH: AS IS(APPROX.) 13.5 ODOR: MILD
FL.PT.(DEG.F): > 200 P-M(CC) SP.GR.(70F): 1.305
VAPOR PRESSURE(mmHG): ~ 18.0 VAPOR DENSITY(AIR=1): < 1.00
VISC cps70F: 39 %SOLUBILITY(WATER): 100.0
EVAP RATE: < 1.00(ETHER=1) APPEARANCE: COLORLESS TO YELLOW
PHYSICAL STATE:LIQUID FREEZE POINT(DEG.F): < -20.00

3) REACTIVITY DATA

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

4) HEALTH HAZARD EFFECTS

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MAY CAUSE MODERATE IRRITATION TO THE SKIN
ACUTE EYE EFFECTS ***
CORROSIVE TO THE EYES
ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT
CHRONIC EFFECTS OF OVEREXPOSURE***
PRODUCT OR PRODUCT COMPONENT MAY INCREASE THE RISK OF CANCER BASED ON LIMITED ANIMAL DATA.
MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN
SYMPTOMS OF EXPOSURE ***
INHALATION OF VAPORS/MISTS/AEROSOLS MAY CAUSE EYE,NOSE,THROAT AND LUNG IRRITATION;SKIN CONTACT MAY CAUSE SEVERE IRRITATION OR BURNS.
PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

5) FIRST AID INSTRUCTIONS

SKIN CONTACT ***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES
EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT
INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY
INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

6) SPILL,DISPOSAL AND FIRE INSTRUCTIONS

SPILL INSTRUCTIONS***
VENTILATE,AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER.THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.
DISPOSAL INSTRUCTIONS****
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL
FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

7) SPECIAL PROTECTIVE EQUIPMENT

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134.USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.
RECOMMENDED SKIN PROTECTION***
RUBBER GLOVES
WASH OFF AFTER EACH USE REPLACE AS NECESSARY.
RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES

8) STORAGE AND HANDLING PRECAUTIONS

STORAGE INSTRUCTIONS***
KEEP CONTAINERS CLOSED WHEN NOT IN USE.
STORE IN COOL VENTILATED LOCATION.STORE AWAY FROM OXIDIZERS
HANDLING INSTRUCTIONS***
ALKALINE.CORROSIVE(EYES).DO NOT MIX WITH ACIDIC MATERIAL.
****
THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDA
****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
9,202 GALLONS DUE TO SODIUM HYDROXIDE(CAUSTIC SODA);
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS:D002=CORROSIVE(PH)
...DOT HAZARD/UN#/ER GUIDE# IS : NOT APPLICABLE
...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:
...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NITRILOTRIACETIC ACID, ,TRISODIUM SALT(NTA.3NA)(CAS# 5064-31-3)
...SARA SECTION 302 CHEMICALS:NONE
...SARA SECTION 313 CHEMICALS:NONE
...SARA SECTION 312 HAZARD CLASS:IMMEDIATE(ACUTE);DELAYED(CHRONIC)
...MICHIGAN CRITICAL MATERIALS: NONE
NFPA/HMIS : HEALTH - 3; FIRE - 1; REACTIVITY - 0; SPECIAL - ALK ; PE - B
NFPA/HMIS : HEALTH - 3; FIRE - 1; REACTIVITY - 0; SPECIAL - ALK ; PE - B

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

MANUFACTURED FOR:

Drummond American Corporation
600 Corporate Woods Pkwy.
Vernon Hills, Illinois 60061

IN CASE OF EMERGENCY CALL:

ROCKY MOUNTAIN POISON & DRUG CENTER
COLLECT AT: (303) 623-5716

DATE OF PREPARATION:
11/01/93

INFORMATION TELEPHONE NUMBER:
(708) 913-9313

SECTION I - IDENTITY

PRODUCT NUMBER DL2041
PRODUCT NAME PERPETRATOR
PRODUCT CLASS SOLVENTS

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

INGREDIENT	CAS NUMBER	%	ACGIH TLV PPM	MG/ M^3	PEL PPM	STEL PPM
PETROLEUM DISTILLATES	8008-2--6	30-65				
AROMATIC PETROLEUM NAPTHA 150	64742-94-5	30-65				
PROPYLENE GLYCOL T-BUTYL ETHER	57018-52-7	1-5				
DIPENTENE	138-86-3	1-5	50	ND	ND	ND
XYLENE *	1330-20-7	1-5	100	435.0	100.00	150.00

* THIS CHEMICAL IS SUBJECT TO S.A.R.A TITLE III SECTION 313 REPORTING

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT (degrees F): 300

VAPOR DENSITY: Heavier than air.

EVAPORATION RATE: Slower than ether.

PERCENT VOLATILE (By Weight): N/A WEIGHT PER GALLON (LBS): 7.07

OPTIONAL INFORMATION:
Appearance/Odor: Clear,green liquid with a chlorinated odor.
Solubility in Water: Negligible
Evaporation Rate: long

PERPETRATOR
DL2041

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION:
OSHA CLASS
DOT CLASS COM

U.N. CLASSIFICATION:
PER DOT
PER IMCO

FLASH POINT: N/A

LEL: N/A

UEL: N/A

METHOD: Tag Open Cup

EXTINGUISHING MEDIA:
FOAM CO2 DRY CHEMICAL WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Containers exposed to direct flame should be cooled with water to eliminate structural weakening of the container's wall and possible rupture.

SPECIAL FIREFIGHTING PROCEDURES:
Warning. Combustible. Clear fire area of unprotected personnel. Do not enter confined fire space without helmut, face shield, bunker coat, gloves, rubber boots, and a positive pressure NIOSH-approved self-contained breathing apparatus.

SECTION V - REACTIVITY DATA

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon dioxide, carbon monoxide and unidentified organic compounds may be formed during combustion.

CONDITIONS TO AVOID:
Open flame, strong oxidizers and heat.

INCOMPATIBILITY (MATERIALS TO AVOID):
Avoid oxidizing materials and avoid chlorinated compounds.

D.O.T. EMERGENCY RESPONSE INFORMATION:

NOT APPLICABLE

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION VI - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:
INHALING:Anesthetic.Irritates resptry. tract. May cause serious nerv. system depresn.EYE & SKIN:Primary irritatn. to skin,dermatitis.Primary irritatn.to eyes, redness, tearing, blurred vision. Harmful or fatal if swallowed. Swallowing may cause abdominal irritation, nausea, vomiting & diarrhea.

PRIMARY ROUTE(S) OF ENTRY: DERMAL INHALATION INGESTION

MEDICAL CONDITIONS PRONE TO OVEREXPOSURE:
Respiratory tract irritation, anesthesia, nausea, vomiting.

TARGET ORGANS AFFECTED:
Kidneys, blood, nerves, liver & lungs.

CARCINOGENICITY:
None of the components in this chemical are listed by IARC, NTP or OSHA as a carcinogen.

EMERGENCY AND FIRST AID PROCEDURES:
SKIN: Wash with soap and water for fifteen minutes, if irritated, see physician. EYES: Flush with plenty of water for 15 minutes, if irritated, see physician. INHALATION: Remove to fresh air. Get medical aid. INGESTION: Do not induce vomiting. Call physician immediately

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Wear appropriate respirator and protective clothing. Shut off source of leak. Dike and contain. Remove with pump to salvage container. Soak up residue with an absobent such as clay, or other inert absorbent and place in non-leaking container. Seal tightly for proper disposal.

WASTE DISPOSAL METHOD:
Dispose of in accordance with federal, state and local regulations.

PERPETRATOR
DL2041

MATERIAL SAFETY DATA SHEET
ESSENTIALLY SIMILAR TO OSHA FORM 174

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION:
Not normally needed in well ventilated area. If TLV is exceeded a NIOSH/MSHA approved breathing apparatus is recommended.

VENTILATION:
VENTILATION: Local Exhaust: Necessary
Mechanical (General): Acceptable

PROTECTIVE GLOVES:
WEAR GLOVES KNOWN TO BE IMPERVIOUS TO THE INGREDIENTS FOUND IN THIS PRODUCT.

EYE PROTECTION:
SAFETY GLASSES ARE RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:
EYE WASH STATION AND SHOWER SHOULD BE AVAILABLE FOR EMERGENCY USE.

HYGENIC PRACTICES:
Wash hands before eating or using the washroom. Smoke --- in SMOKING AREAS O N L Y .

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Keep out of reach of children.Keep container closed when not in use. Read label directions & cautions before use.Store in a cool dry area. Avoid dense accumulation of vapors. Avoid skin and eye contact and excessive vapor inhalation. Store away from ignition sources. Clean contaminated clothing before reuse.

OTHER PRECAUTIONS:
Empty containers may contain hazardous residue. Keep away from heat, sparks and do not reuse container. Do not cut, puncture or weld on or near container. Prevent breathing of vapor or spray mist.

SECTION X - OTHER INFORMATION

-----NFPA INDEX-----

HEALTH	2
FLAMMABILITY	1
REACTIVITY	0

PREPARED BY: Guy S. Zobec
Drummond American Corporation
600 Corporate Woods Parkway
Vernon Hills, Illinois 60061

TLV	Threshold Limit Value	ND	No Data	--NFPA HAZARD INDEX--	
PEL	Permissible Exposure Level	LEL	Lower Explosive Level	SEVERE HAZARD	4
NFPA	National Fire Protection Association	NE	Not Established	SERIOUS HAZARD	3
CAS	Chemical Abstract Service	PPM	Parts Per Million	MODERATE HAZARD	2
NTP	National Toxicology Program	D.O.T.	Department of Transportation	SLIGHT HAZARD	1
OSHA	Occupational Safety and Health Admin.	N/A	Not Applicable	MINIMAL HAZARD	0
IARC	International Agency for Research on Cancer	M^3	Approximate milligrams of substance per cubic meter of air		
STEL	Short Term Exposure Limit, duration is for 15 minutes				

Mobil

MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

APPROVAL DATE: 01/23/95

PRODUCT NAME: MOBIL MULTI-PURPOSE ATF
SUPPLIER: MOBIL OIL CORP.
PRODUCTS AND TECHNOLOGY DEPT.
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Emergency (call collect):	609-737-4411	
Product and MSDS Information:	800-662-4525	703-849-3265
CHEMTREC:	800-424-9300	202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

This product is not formulated to contain ingredients which have exposure limits established by regulatory agencies. It is not hazardous to health as defined by the European Union Dangerous Substances/Preparations Directives. See Section 15 for a regulatory analysis of the ingredients.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.
EFFECTS OF OVEREXPOSURE: No significant effects expected.
EMERGENCY RESPONSE DATA: Red Liquid. DOT ERG No. - NA

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water.
INHALATION: Not expected to be a problem.
INGESTION: Not expected to be a problem. However, if greater than 1/2 liter(pint) ingested, immediately give 1 to 2 glasses of water and call a physician, hospital emergency room or poison control center for assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None. Flash Point C(F): > 176(349) (ASTM D-92). Flammable limits - LEL: NA, UEL: NA.
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0
HAZARDOUS DECOMPOSITION PRODUCTS: Metal oxides. Carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.
ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.
PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.
STORAGE: Do not store in open or unlabelled containers. Store away from strong oxidizing agents or combustible material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: No special requirements under ordinary conditions of use and with adequate ventilation.
RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.
EYE PROTECTION: Normal industrial eye protection practices should be employed.

(Section continued next page)

SKIN PROTECTION: No special equipment required. However, good personal hygiene practices should always be followed.
EXPOSURE LIMITS: This product does not contain any components which have recognized exposure limits. However, a threshold limit value of 5.00 mg/m3 is suggested for oil mist.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Red
ODOR: Mild
ODOR THRESHOLD: NA
pH: NA
BOILING POINT C(F): > 316(600)
MELTING POINT C(F): NA
FLASH POINT C(F): > 176(349) (ASTM D-92)
FLAMMABILITY: NA
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NA
RELATIVE DENSITY, 15/4 C: 0.863
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: 34.6
VISCOSITY AT 100 C, cSt: > 6.8
POUR POINT C(F): < -45(-49)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: EXEMPT IN U.S.
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Metal oxides. Carbon monoxide.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not applicable ---Harmful concentrations of mists and/or vapors are unlikely to be encountered through any customary or reasonably foreseeable handling, use, or misuse of this product.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Severely solvent refined and severely hydrotreated mineral base oils have been tested at Mobil Environmental and Health Sciences Laboratory by dermal application to rats 5 days/week for 90 days at doses significantly higher than those expected during normal industrial exposure. Extensive evaluations including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

---CHRONIC TOXICOLOGY (SUMMARY)---

The base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using the Mobil Modified Ames Test.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: Not established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product

(Section continued next page)

characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS and AICS.

EU Classification and Labeling: EU labeling not required.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals reportable under SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
TOLUENE (0.11%)	108-88-3	22

--- REGULATORY LISTS SEARCHED ---

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES

USE: AUTOMATIC TRANSMISSION FLUID

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

See container label for ingredient information.

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For Mobil Use Only: MHC: 1* 1* NA 1* 1*, MPPEC: A, REQ: US - MARKETING, SAFE USE: L
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INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

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Prepared by: Mobil Oil Corporation
Environmental Health and Safety Department, Princeton, NJ

MOBIL

MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

APPROVAL DATE: 12/13/94

PRODUCT NAME: MOBIL DTE OIL EXTRA HEAVY
SUPPLIER: MOBIL OIL CORP.
PRODUCTS AND TECHNOLOGY DEPT.
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Emergency (call collect):	609-737-4411	
Product and MSDS Information:	800-662-4525	703-849-3265
CHEMTREC:	800-424-9300	202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

This product is not formulated to contain ingredients which have exposure limits established by regulatory agencies. It is not hazardous to health as defined by the European Union Dangerous Substances/Preparations Directives. See Section 15 for a regulatory analysis of the ingredients.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.
EFFECTS OF OVEREXPOSURE: No significant effects expected.
EMERGENCY RESPONSE DATA: Dark Amber Liquid. Note: Pressurized mists may form a flammable mixture. DOT ERG No. - NA

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water. High pressure accidental injection through the skin requires immediate medical attention for possible incision, irrigation and/or debridement.
INHALATION: Not expected to be a problem.
INGESTION: Not expected to be a problem. However, if greater than 1/2 liter(pint) ingested, immediately give 1 to 2 glasses of water and call a physician, hospital emergency room or poison control center for assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Note: Pressurized mists may form a flammable mixture. Flash Point C(F): > 226(439) (ASTM D-92). Flammable limits - LEL: NA, UEL: NA.
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Metal oxides. Elemental oxides.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.
ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.
PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: High pressure injection under the skin may occur due to the rupture of pressurized lines. Always seek medical attention.
STORAGE: Do not store in open or unlabelled containers. Store away from strong oxidizing agents or combustible material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: No special requirements under ordinary conditions of use and with adequate ventilation.
RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.
EYE PROTECTION: Normal industrial eye protection practices should be employed.
SKIN PROTECTION: No special equipment required. However, good personal hygiene practices should always be followed.
EXPOSURE LIMITS: This product does not contain any components which have recognized exposure limits. However, a threshold limit value of 5.00 mg/m3 is suggested for oil mist.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Dark Amber
ODOR: Mild
ODOR THRESHOLD: NA
pH: NA
BOILING POINT C(F): > 316(600)
MELTING POINT C(F): NA
FLASH POINT C(F): > 226(439) (ASTM D-92)
FLAMMABILITY: NA
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NA
RELATIVE DENSITY, 15/4 C: 0.89
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 139.5
VISCOSITY AT 100 C, cSt: 14.7
POUR POINT C(F): -3(27)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: EXEMPT IN U.S.
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable
CONDITIONS TO AVOID: Extreme heat.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Metal oxides. Elemental oxides.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not applicable ---Harmful concentrations of mists and/or vapors are unlikely to be encountered through any customary or reasonably foreseeable handling, use, or misuse of this product.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less).

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3).

OTHER ACUTE TOXICITY DATA: The acute toxicological results summarized above are based on testing of representative Mobil products.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Representative Mobil formulations have been tested at the Mobil Environmental and Health Sciences Laboratory by dermal applications to rats 5 days/week for 90 days at doses significantly higher than those expected during normal industrial exposure. Extensive evaluations, including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Dermal exposure of pregnant rats to representative formulations did not cause adverse effects in either the mothers or their offspring.

---CHRONIC TOXICOLOGY (SUMMARY)---

The base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using the Mobil Modified Ames Test.

---SENSITIZATION (SUMMARY)---

Representative Mobil formulations have not caused skin sensitization in guinea pigs.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: Not established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA and DSL.

EU Classification and Labeling: EU labeling not required.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

(Section continued next page)

This product contains no chemicals reportable under SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
ZINC (ELEMENTAL ANALYSIS) (0.08%)	7440-66-6	22
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2: 1) (ZDDP) (0.45%)	68649-42-3	22

--- REGULATORY LISTS SEARCHED ---

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES

USE: LUBRICANT

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

See container label for ingredient information.

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For Mobil Use Only: MHC: 1* 1* NA 1* 1*, MPPEC: A, REQ: US - MARKETING
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INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

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Prepared by: Mobil Oil Corporation
Environmental Health and Safety Department, Princeton, NJ

MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

APPROVAL DATE: 01/01/95

PRODUCT NAME: **MOBIL DTE OIL HEAVY**
SUPPLIER: MOBIL OIL CORP.
PRODUCTS AND TECHNOLOGY DEPT.
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Emergency (call collect):	609-737-4411	
Product and MSDS Information:	800-662-4525	703-849-3265
CHEMTREC:	800-424-9300	202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

This product is not formulated to contain ingredients which have exposure limits established by regulatory agencies. It is not hazardous to health as defined by the European Union Dangerous Substances/Preparations Directives. See Section 15 for a regulatory analysis of the ingredients.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.
EFFECTS OF OVEREXPOSURE: No significant effects expected.
EMERGENCY RESPONSE DATA: Amber Liquid. DOT ERG No. - NA

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water.
INHALATION: Not expected to be a problem.
INGESTION: Not expected to be a problem. However, if greater than 1/2 liter(pint) ingested, immediately give 1 to 2 glasses of water and call a physician, hospital emergency room or poison control center for assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None. Flash Point C(F): > 210(410) (ASTM D-92). Flammable limits - LEL: NA, UEL: NA.
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Elemental oxides. Metal oxides.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.
ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.
PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.
STORAGE: Do not store in open or unlabelled containers. Store away from strong oxidizing agents or combustible material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: No special requirements under ordinary conditions of use and with adequate ventilation.
RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.
EYE PROTECTION: Normal industrial eye protection practices should be employed.
SKIN PROTECTION: No special equipment required. However, good personal hygiene practices should always be followed.
EXPOSURE LIMITS: This product does not contain any components which have recognized exposure limits. However, a threshold limit value of 5.00 mg/m3 is suggested for oil mist.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Amber
ODOR: Mild
ODOR THRESHOLD: NA
pH: NA
BOILING POINT C(F): > 316(600)
MELTING POINT C(F): NA
FLASH POINT C(F): > 210(410) (ASTM D-92)
FLAMMABILITY: NA
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NA
RELATIVE DENSITY, 15/4 C: 0.88
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 90.0
VISCOSITY AT 100 C, cSt: 11.4
POUR POINT C(F): -7(20)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: EXEMPT IN U.S.
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Elemental oxides. Metal oxides.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not applicable ---Harmful concentrations of mists and/or vapors are unlikely to be encountered through any customary or reasonably foreseeable handling, use, or misuse of this product.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: 0 or greater but 6 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: 0.5 or less). ---Based on testing of similar products and/or the components.

OTHER ACUTE TOXICITY DATA: The acute toxicological results summarized above are based on testing of representative Mobil products. Representative Mobil formulations have shown no acute effects, administered via the inhalation route, when tested at maximum attainable oil mist or vapor concentrations.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Representative Mobil formulations have been tested at the Mobil Environmental and Health Sciences Laboratory by dermal applications to rats 5 days/week for 90 days at doses significantly higher than those expected during normal industrial exposure. Extensive evaluations, including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Dermal exposure of pregnant rats to representative formulations did not cause adverse effects in either the mothers or their offspring.

---CHRONIC TOXICOLOGY (SUMMARY)---

The base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects.

(Section continued next page)

These results are confirmed on a continuing basis using the Mobil Modified Ames Test.

---SENSITIZATION (SUMMARY)---

Representative Mobil formulations have not caused skin sensitization in guinea pigs.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

Acute LC/EC50 Fish: Juvenile Rainbow Trout: Practically non-toxic ---Based on testing of similar products.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA and DSL.

EU Classification and Labeling: EU labeling not required.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals reportable under SARA (313) toxic release program.

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
ZINC (ELEMENTAL ANALYSIS) (0.01%)	7440-66-6	22
PHOSPHORODITHOIC ACID, O,O-DI C1-14-ALKYL ESTERS, ZINC SALTS (2: 1) (ZDDP) (0.10%)	68649-42-3	22

--- REGULATORY LISTS SEARCHED ---

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES

USE: STEAM TURBINE OIL

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

See container label for ingredient information.

****

For Mobil Use Only: MHC: 1* 1* NA 0* 0*, MPPEC: A, REQ: US - MARKETING, SAFE USE: L

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INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

****

Prepared by: Mobil Oil Corporation
Environmental Health and Safety Department, Princeton, NJ

MATERIAL SAFETY DATA BULLETIN

1. PRODUCT AND COMPANY IDENTIFICATION

APPROVAL DATE: 01/01/95

PRODUCT NAME: **MOBIL DTE 797 OIL**
SUPPLIER: MOBIL OIL CORP.
PRODUCTS AND TECHNOLOGY DEPT.
3225 GALLOWS RD.
FAIRFAX, VA 22037

24 - Hour Emergency (call collect):	609-737-4411	
Product and MSDS Information:	800-662-4525	703-849-3265
CHEMTREC:	800-424-9300	202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

This product is not formulated to contain ingredients which have exposure limits established by regulatory agencies. It is not hazardous to health as defined by the European Union Dangerous Substances/Preparations Directives. See Section 15 for a regulatory analysis of the ingredients.

See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.
EFFECTS OF OVEREXPOSURE: No significant effects expected.
EMERGENCY RESPONSE DATA: Straw Liquid. DOT ERG No. - NA

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water.
INHALATION: Not expected to be a problem.
INGESTION: Not expected to be a problem. However, if greater than 1/2 liter(pint) ingested, immediately give 1 to 2 glasses of water and call a physician, hospital emergency room or poison control center for assistance. Do not induce vomiting or give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None. Flash Point C(F): > 207(405) (ASTM D-92). Flammable limits - LEL: NA, UEL: NA.
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Elemental oxides. Metal oxides.

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.
ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.
PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.
STORAGE: Do not store in open or unlabelled containers. Store away from strong oxidizing agents or combustible material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: No special requirements under ordinary conditions of use and with adequate ventilation.
RESPIRATORY PROTECTION: No special requirements under ordinary conditions of use and with adequate ventilation.
EYE PROTECTION: Normal industrial eye protection practices should be employed.
SKIN PROTECTION: No special equipment required. However, good personal hygiene practices should always be followed.
EXPOSURE LIMITS: This product does not contain any components which have recognized exposure limits. However, a threshold limit value of 5.00 mg/m3 is suggested for oil mist.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Straw
ODOR: Mild
ODOR THRESHOLD: NA
pH: NA
BOILING POINT C(F): > 316(600)
MELTING POINT C(F): NA
FLASH POINT C(F): > 207(405) (ASTM D-92)
FLAMMABILITY: NA
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NA
RELATIVE DENSITY, 15/4 C: 0.86
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 28.8
VISCOSITY AT 100 C, cSt: 5.4
POUR POINT C(F): -7(20)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: EXEMPT IN U.S.
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable
CONDITIONS TO AVOID: Extreme heat.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Elemental oxides. Metal oxides.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not applicable ---Harmful concentrations of mists and/or vapors are unlikely to be encountered through any customary or reasonably foreseeable handling, use, or misuse of this product.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: 0 or greater but 6 or less).

SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: 0.5 or less).

OTHER ACUTE TOXICITY DATA: The acute toxicological results summarized above are based on testing of representative Mobil products. Representative Mobil formulations have shown no acute effects, administered via the inhalation route, when tested at maximum attainable oil mist or vapor concentrations.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Representative Mobil formulations have been tested at the Mobil Environmental and Health Sciences Laboratory by dermal applications to rats 5 days/week for 90 days at doses significantly higher than those expected during normal industrial exposure. Extensive evaluations, including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Dermal exposure of pregnant rats to representative formulations did not cause adverse effects in either the mothers or their offspring.

---CHRONIC TOXICOLOGY (SUMMARY)---

The base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using the Mobil Modified Ames Test.

(Section continued next page)

---SENSITIZATION (SUMMARY)---

Representative Mobil formulations have not caused skin sensitization in guinea pigs.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

Acute LC/EC50 Fish: Juvenile Rainbow Trout: Practically non-toxic ---Based on testing of similar products.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.

RID/ADR: NOT REGULATED BY RID/ADR.

IMO: NOT REGULATED BY IMO.

IATA: NOT REGULATED BY IATA.

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA.

EU Classification and Labeling: EU labeling not required.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

This product contains no chemicals reportable under SARA (313) toxic release program.

THIS PRODUCT HAS BEEN AUTHORIZED BY USDA FOR USE UNDER THE FOLLOWING CATEGORY: H2 - Lubricants With No Food Contact

The following product ingredients are cited on the lists below:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS

*** NO REPORTABLE INGREDIENTS ***

--- REGULATORY LISTS SEARCHED ---

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES

USE: STEAM TURBINE OIL

NOTE: MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS.

See container label for ingredient information.

****

For Mobil Use Only: MHC: 1* 1* NA 0* 0*, MPPEC: A, REQ: US - MARKETING

****

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

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Prepared by: Mobil Oil Corporation
Environmental Health and Safety Department, Princeton, NJ

BETZ

BETZ MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 14-FEB-1996
PRINTED DATE: 12-MAR-1996

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : BETZ AFS

PRODUCT APPLICATION AREA: ANTIFOAM AGENT.

COMPANY ADDRESS:
Betz Water Management Group, Division Betz Laboratories,Inc.
200 Witmer Road, Horsham, PA 19044
Information phone number (215) - 773-6131

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential azards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

CONTINUED

4) FIRST AID MEASURES

SKIN CONTACT:
Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:
Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical/CO2/foam or water--Slippery condition; use sand/grit.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:
> 200F SETA(CC)

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7) HANDLING AND STORAGE

HANDLING:
Alkaline. Do not mix with acidic material.

STORAGE:
Keep containers closed when not in use. Protect from freezing.

CONTINUED

10) STABILITY AND REACTIVITY

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
Thermal decomposition (destructive fires) yields elemental oxides.
BETZ INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"A"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Fathead Minnow 96 Hour Static Screen with 24-Hour Renewal

0% Mortality: 5000 mg/L

Daphnia magna 48 Hour Static Screen with 24-Hour Renewal

10% Mortality: 5000 mg/L
0% Mortality: 1250 mg/L

BIODEGRADATION

COD (mg/gm):	609 Calculated
TOC (mg/gm):	184 Calculated
BOD-5 (mg/gm):	3 Calculated
BOD-28 (mg/gm):	11 Calculated

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002 = Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

CONTINUED

16) OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	22-AUG-1995	REVISED FORMAT	** NEW **
	10-OCT-1995	;EDIT:9	22-AUG-1995
	04-JAN-1996	;EDIT:9	10-OCT-1995
	14-FEB-1996	;EDIT:9	04-JAN-1996

54-B

TOTAL PETROLEUM, INC.

MATERIAL SAFETY DATA SHEET

Total Kerosene K-1 (Alma)

SYNONYMS: CHEMTREC 1-800-424-9300

SECTION I - MANUFACTURER INFORMATION

ADDRESS:	EMERGENCY PHONE NUMBER:
E. Superior Street, Alma, Mi. 48802	(517) 463-1164
P.O. Box 857, Arkansas City, Ks. 67005	(316) 442-5100
P.O. Box 188 Ardmore, Ok. 73401	(405) 221-6222
Colorado Refining Company (a wholly-owned subsidiary)	
5800 Brighton Blvd, Commerce City, Co. 80022	(303) 295-4500

Date prepared or revised: January 1, 1994

Prepared or revised by: J.M. Kazarian

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Component	CAS No.	TLV*	PEL*	Other Limits	%
Kerosene (Severely Hydrotreated)	8008-20-6	NA	NA	100 mg/m³*	100

*for kerosene by NIOSH

*Exposure limits expressed as eight-hour time-weighted aver concentrations in parts of contaminant per million parts of air by vol (ppm). "Other Limits" are recommended by the National Institute Occupational Safety and Health (NIOSH) and are time-weighted over hours unless otherwise specified.

NFPA 704M Rating

Health = 1 Flammability = 2 Reactivity = 0 Other = Blank

0 = insignificant 1 = slight 2 = moderate 3 = high 4 = extreme

NA = No applicable information was found

TOTAL PETROLEUM, INC.

MATERIAL SAFETY DATA SHEET

Total Kerosene K-1 (Alma)

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (°F): Initial 325; Final 540
Specific Gravity (H_2O = 1): 0.8
Vapor Pressure (mm Hg @ 100°F): <50
Melting Point: -35°F
Vapor Density (Air = 1): 4.5
Evaporation Rate (Ether = 1): NA
Solubility in water: Insoluble
Appearance and odor: Clear liquid with characteristic odor of kerosene

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point (method used): 100°F to 180°F (pm)
Flammable Limits LEL: 0.7%
UEL: 5.0%

Extinguishing media: Dry chemical, foam or carbon dioxide, water spray or fog to cool surrounding containers.

Special Fire Fighting Procedures: Self contained breathing apparatus may be required.

Unusual Fire and Explosion Hazards: NA

SECTION V - REACTIVITY DATA

Stability Unstable:
Stable: X

Conditions to Avoid: Heat and flames

Incompatibility (materials to avoid): Oxidizers

Hazardous Decomposition or Byproducts: Carbon monoxide and other petroleum decomposition products.

Hazardous Polymerization May Occur:
Will not Occur: X

Conditions to avoid: NA

NA = No applicable information was found

TOTAL PETROLEUM, INC.

MATERIAL SAFETY DATA SHEET

Total Kerosene K-1 (Alma)

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry: Inhalation? Yes
Skin? Yes
Ingestion? Yes

Health hazards (acute and chronic)

Acute: Central nervous system depression, peripheral nervou system depression, narcosis, asphyxiation, gastrointestinal disturbances and eye and skin irritation.

Chronic: Dermatitis, pneumonitis, pulmonary edema, and kidne damage.

Carcinogenicity: NTP: No IARC: No OSHA: No

Signs and Symptoms of Exposure: Headache, drowsiness, eye, respiratory c skin irritation, nausea, numbness.

Medical Conditions generally Aggravated by Exposure: Impaired pulmona function, especially those with obstructive airway diseases.

Emergency and First Aid Procedures: Remove from contaminated atmospher Remove contaminated clothing. Flush affected areas thoroughly wi water. IF SWALLOWED, DO NOT INDUCE VOMITING. Seek medical attenti immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled: Eliminate a sources of ignition. Contain with earthen dike or petroleum absorbe material. Remove with grounded suction pump to salvage containe Remove all contaminated materials.

Waste Disposal Method: Per federal, state and local laws.

Precautions to be taken in Handling and Storage: Keep away from a ignition sources (e.g. heat, flame, sparks, strong oxidizers). Bond a ground container.

Other Precautions: NA

NA = No applicable information was found

TOTAL PETROLEUM, INC.

MATERIAL SAFETY DATA SHEET

Total Kerosene K-1 (Alma)

SECTION VIII - CONTROL MEASURES

Respiratory Protection (specify type): Organic vapor respirator approved by NIOSH.

Ventilation	Local Exhaust:	To control vapors
	Special:	Use explosion proof equipment
	Mechanical:	For confined spaces
	Other:	NA

Protective Gloves: PVC or equivalent resistant glove.

Eye Protection: Chemical goggles or face shield.

Other protective clothing or equipment: PVC or equivalent clothing if splashing is likely.

Work/Hygienic Practices: Keep body contact and splash to a minimum.

SECTION IX - ADDITIONAL INFORMATION

Shipping Name - Kerosene
Hazard Class - Combustible liquid
ID Number - UN 1223

SARA

Hazard class:	
Flammable:	No
Acute:	Yes
Chronic:	Yes
Stored Pressure:	No
Reactive:	No

Section 313 listed components - None

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originated with Total Petroleum or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

NA = No applicable information was found

INDUSTRIAL MACHINERY

27-13-313
1st Edition

Material Safety Data Sheet

Section I - Product Identification

Trade Name and Synonyms	Part Number	Health Emergency Phone Number
AEON 4000	**28H57, 28H36**	**(217) 222-5400** **Safety Department**
Manufacturer's Name Cooper Industries/Industrial Machinery Division		Transport Emergency Phone Number **(800) 424-9300 (CHEMTREC)**
Address 1800 Gardner Expressway - Quincy, IL 62301		
Product Identification Rotary Screw Compressor Lubricant and Coolant		
Chemical Names and Synonyms Hydrocarbons and Additives		

ion II - Transportation (NR-Not Regulated by TDG)

UN Number: NR Primary Classification: NR Subsidiary Classification: NR

Compatibility Groups: NR

Section III - Composition

COMPONENTS	ALLOWABLE LIMITS (8 Hr.)	% (VOL.)	CAS #
Severely hydrotreated paraffinic oil (C_{23} C_{66})	5 mg/m³ (oil mist)	>98	72623-87-1 72623-85-9 72623-83-7
Acrylic polymer, defoamer, antioxidants, nust inhibitors	N/A	< 1	N/A
Organo-zinc additive*	N/A	< 1	N/A

ontains zinc dialkyldithiophosphate (0.05% as Zn).

ction IV - Physical Data

)ensity at 15°C):	0.86-0.88 kg/L (approx.)	Boiling Point/ Range (at 1 atm):	380-635°C (approx.)
/apour Pressure at 25°C):	<0.001 kPa (approx.)	Percent Volatile (at 20°C):	0%
/apour Density at 20°C):	N/A	Evaporation Rate:	N/A
Solubility in Water:	Negligible	Pour Point:	-36 to -15°C
/iscosity: (Kinematic)	35, 48, 69, 102 154 cSt (at 40°C) (typical respectively)		

›ction V - Fire and Explosion Data

Flash Point (method used = COC):	198-232°C (minimum)
Flammable limits in air (% by volume):	N/A
Auto-Ignition Temperature:	>355°C
Fire and Explosion Hazards:	Addition of water or foam may cause frothing. Do not cut, drill or weld empty containers.
Extinguishing media:	Dry chemical, foam, water spray, carbon dioxide for small fires.
Firefighting Procedures: LOW FIRE HAZARD	Contain spill. Cover with extinguishing agent. Use water spray to cool fire-exposed containers and as a protective screen. Do not point solid water stream directly into burning oil to avoid spreading.

ection VI - Health Hazard Information

Toxicity Data	*Estimated acute LD_{50} >5000 mg/kg (rat, oral): practically non-toxic. Severely hydrotreated base oils are negative when tested by the modified Ames test.
Effects of Overexposure	
Inhalation:	If heated, sprayed or misted may cause chemical pneumonitis.
Skin and Eyes:	Mildly irritating to eyes. Prolonged or repeated contact with skin may cause mild irritation and possibly dermatitis.
Ingestion:	Low toxicity on ingestion. Has laxative effect.

* Based on toxicity of severely hydrotreated paraffinic oil only.

rgency and First Aid Procedures Information	
'kin:	Remove contaminated clothing – launder before resue. Soap and water wash. Discard saturated leather articles.
Eyes:	Copious warm water flush – 15 minutes. Physician assessment if eyes inflamed.
Inhalation:	Evacuate to fresh air. Apply Cardio Pulmonary Resuscitation if required. Administer oxygen if available. If resuscitation is required, physician assessment mandatory.
Ingestion:	DO NOT INDUCE VOMITING. Force fluids. Activated charcoal tablets.
Notes to Physician	Gastric lavage should only be done after endotracheal intubation in view of the risk of aspiration which can cause serious chemical pneumonitis for which antiblotic and corticosteriod therapy may be indicted.

Section VII - Reactivity Data

Stability:	Stable.
nditions to avoid:	Excessive heat, formation of oil mist.
Materials to avoid:	Strong oxidizing agents (peroxides, chlorine, strong acids, etc.).
Hazardous decomposition products:	COx, smoke on combustion.
Can hazardous polymerization occur:	No.

Section VIII- Spill or Leak Procedures

Steps to be taken if material is released or spilled	Contain spill. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. Scoop up used adsorbent and rags into drums.
Waste Disposal Method:	Dispose in approved landfill site or licensed waste reclaimer facility.

Section IX - Special Protection Information

Ventilation:	General ventilation.
Respirator Protection:	Normally not necessary. If mist generated by heating, spraying, etc. wear approved organic vapour respirator suitable for oil mist in areas with sufficient oxygen.
Protective Gloves:	NITRILE, NEOPRENE
Eye Protection:	None normally required; chemical goggles if splashing likely or high-pressure system used.
Other Protective Clothing:	Oil-resistant clothing if direct contact with liquid likely.

Section X - Special Precautions

Store in cool, well-ventilated area. Wash hands after handling and before eating. Avoid inhalation and skin contact. Launder work cloths frequently. Discard saturated leather articles.

NOTE: Not a controlled product under Canadian WHMIS Hazard Criteria; as specified in the Controlled Product Regulation.

AEON Lubricants are not formulated to contain PCBS.

Prepared by Product Specialist, Aftermarket
May 1, 1990

APPENDIX C

• INSPECTION/REPORT FORMS •

- Emergency Spill Notification Form
- Spill History Report Form
- Training Record Form
- Fire Protection System Pressure Test Inspection
- Pollution Incident Prevention Inspection Report Form

EMERGENCY SPILL NOTIFICATION FORM

Michigan Paperboard Company
79 East Fountain Street
Battle Creek, Michigan

1. Name of spill reporter _____
2. Phone number of spill reporter _____
3. Facility name _____
4. Facility address _____

   _____
5. Facility phone number _____
6. Time, duration, and type of incident _____

   _____

   _____
7. Location of incident _____
8. Materials involved (include quantities) _____

   _____

   _____

   _____
9. Identification of material as containing an Extremely Hazardous Substance (if applicable)

   _____

   _____
10. Release to environment (e.g., land, stream, air, groundwater) _____

    _____
11. Circumstances (e.g., spill, process upset, equipment failure, emission) _____

    _____

    _____

    _____
12. Proper precautions to take as a result of the spill _____

    _____

    _____

    _____

13. Containment/removal efforts (e.g., emergency dike, boom, etc.) and personnel involved

_____

_____

_____

14. Known or anticipated health risks or advice _____

_____

_____

_____

15. Extent of injuries, if any _____

_____

16. Name(s) and phone number(s) of person(s) to contact for further information _____

_____

_____

_____

17. Notification given to (agency and phone number). Time and date of call_____

_____

_____

_____

SPILL HISTORY REPORT FORM

Michigan Paperboard Company
79 East Fountain Street
Battle Creek, Michigan

Date:_____ Time:_____

Reported By:_____ Location:_____

Material Spilled:_____ Volume:_____

Cause of Spill:_____

Corrective Action Taken:_____

_____

Plans/Recommendations for Preventing Recurrence:_____

_____

_____

==========

Date:_____ Time:_____

Reported By:_____ Location:_____

Material Spilled:_____ Volume:_____

Cause of Spill:_____

Corrective Action Taken:_____

_____

Plans/Recommendations for Preventing Recurrence:_____

_____

_____

MICHIGAN PAPERBOARD COMPANY TRAINING RECORD

The following associates were trained in accordance with the Michigan Paperboard SPCC/PIPP/SWP3 Training Standard on this date:_____.

NAME	SIGNATURE

Record Retention: 3 Years
File: SPCC/PIPP/SWP3 - Training Standard

11/96

MICHIGAN PAPERBOARD COMPANY
FIRE PROTECTION SYSTEM PRESSURE TEST INSPECTION

DATE	RISER NUMBER	WATER PRESSURE	WATER PRESSURE WITH DRAIN OPEN	INITIALS

REMARKS:

POLLUTION INCIDENT PREVENTION INSPECTION REPORT FORM

Michigan Paperboard Company
79 East Fountain Street
Battle Creek, Michigan

1. Date of inspection: _____

2. Name of inspector: _____

3. Spill absorbent materials and spill response equipment
   a. Is supply adequate? ☐ YES ☐ NO
   b. Is equipment easily accessible? ☐ YES ☐ NO
   c. Required action:

   _____
   _____
   _____
   _____

4. Storm sewer manhole covers
   a. Any unpermitted discharges? ☐ YES ☐ NO
   b. Are chemical materials stored in near vicinity? ☐ YES ☐ NO
   c. Required action:

   _____
   _____
   _____
   _____

5. Cracks/failures in secondary structures or foundations (check containment walls and floor)
   a. Opti-trol 4000 tank
   b. Betz 6304B Balanced Polymer tank ☐ YES ☐ NO
   c. Nalco 7530 tank ☐ YES ☐ NO
   d. Hercon 75 tank ☐ YES ☐ NO
   e. Other tanks _____ ☐ YES ☐ NO
   f. Required action:

   _____
   _____
   _____
   _____

6. Corrosion/damage evident on bulk storage tanks
   a. Opti-trol 4000 tank ☐ YES ☐ NO
   b. Betz 6304B Balanced Polymer tank ☐ YES ☐ NO
   c. Nalco 7530 tank ☐ YES ☐ NO
   d. Hercon 75 tank ☐ YES ☐ NO
   e. Other tanks _____ ☐ YES ☐ NO
   f. Required action:

   _____
   _____
   _____

7. Aboveground piping
   a. Leaking at packing, fittings, expansion joints? ☐ YES ☐ NO
   b. Pipe abrasion at supports? ☐ YES ☐ NO
   c. Pipe supports in acceptable condition? ☐ YES ☐ NO
   d. Pipe coating in acceptable condition? ☐ YES ☐ NO
   e. Pump supports in acceptable condition? ☐ YES ☐ NO
   f. Valves operable? ☐ YES ☐ NO
   g. Pressure gauges operable? ☐ YES ☐ NO
   h. Packing leaking excessively? ☐ YES ☐ NO
   i. Flowline leakage? ☐ YES ☐ NO
   j. Required action:

_____
_____
_____
_____

8. Personnel instructed on emergency spill response and new environmental legislation? ☐ YES ☐ NO
   a. Explain:

_____
_____
_____
_____

   b. Required action:

_____
_____
_____
_____

9. Is yard lighting sufficient? ☐ YES ☐ NO
   a. Required action:

_____
_____
_____
_____

10. Are yard fencing and gates sufficient? ☐ YES ☐ NO
   a. Required action:_____
_____
_____
_____

APPENDIX D

• STORM WATER PERMIT •

- Certificate of Coverage
- General Permit
- Site Location Map
- Storm Water Site Map
- Semi-Annual Storm Water Pollution Prevention Inspection Report Form

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

CERTIFICATE OF COVERAGE

UNDER GENERAL PERMIT NO. MIR000000
FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
Authorized by Michigan Act 245, Public Acts of 1929, as amended

CERTIFICATE OF COVERAGE NO.: **MIR14J006**

DESIGNATED NAME: Mich Carton & Paperboard Co

PERMITTEE MAILING ADDRESS: Michigan Carton & Paperboard Co.
79 East Fountain St.
Battle Creek, Mi 49017

This Certificate of Coverage authorizes Michigan Carton & Paperboard Co. to discharge, in accordance with the provisions of General Permit No. MIR000000, storm water from a facility located at 79 East Fountain St., Battle Creek, MI 49017, to the Kalamazoo River in the NW quarter of the NE quarter of Section 12, Town 2S, Range 8W, Calhoun Co.

References in General Permit No. MIR000000 to the District Supervisor of the Surface Water Quality Division (SWQD) of the Department of Natural Resources shall be defined as the Jackson District Supervisor of the SWQD. The Jackson District office is located at 301 E. Louis Glick, Jackson, Michigan, 49201, telephone 517-780-7900, fax 517-780-7855.

Any person who is aggrieved by this Certificate of Coverage may file a sworn petition for a contested case hearing on this Certificate of Coverage with the Michigan Commission of Natural Resources (c/o Chief, Permits Section, Surface Water Quality Division) in accordance with the provisions of Rule 2192(c) of the Part 21 Rules of Act 245 of the Public Acts of 1929, as amended. A petition may be rejected by the Commission as being untimely if it is filed more than 60 days after the Surface Water Quality Division reports that the Certificate of Coverage has been approved.

This Certificate of Coverage is based on an application received by the Department of Natural Resources on August 5, 1994, and is subject to all conditions specified in General Permit No. MIR000000 issued February 15, 1994. This Certificate of Coverage may be modified, terminated, reissued, or revoked as allowed for in General Permit No. MIR000000.

Mary Ellen Cromwell

December 5, 1994
Date

Mary Ellen Cromwell
District Supervisor
Surface Water Quality Division

RAL RESOURCES
OMMISSION
RRY C. BARTNIK
RR VUYST
U E
M L
AVID HOLLI
EY M. SPANO
RDAN B. TATTER

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

ROLAND HARMES, Director

Jackson District Office
301 E. Louis Glick Highway, Jackson, MI 49201

December 5, 1994

Mr. John T. Goll Jr., Michigan Carton & Paperboard Co.
79 East Fountain St.
Battle Creek, MI 49017

Dear Mr. Goll:

SUBJECT: Storm Water General Permit
Certificate of Coverage MIR14J006

The Surface Water Quality Division received on August 5, 1994, your Notice of Intent to be covered under the Storm Water General Permit (MIR000000).

Please find enclosed a Certificate of Coverage, MIR14J006, granting this request and a copy of this storm water general permit. The effective date of this coverage is December 5, 1994. The granting of this coverage under this storm water general permit establishes several compliance requirements. Based on the coverage date of December 5, 1994, your facility is required to have a storm water certified operator by December 5, 1995. The Storm Water Pollution Prevention Plan must be developed by June 5, 1996, with the non-structural provisions of the plan implemented by December 5, 1996, and the structural provisions, if required, implemented by December 5, 1997. (See Part I,B.2., of this general permit)

Based on the issuance of this Certificate of Coverage, your storm water discharge control facility is officially classified as A.1.i, Storm Water Management Industrial Site. You will be receiving a notice in the mail as to when storm water management training classes and certification exams will be offered. Please contact Thomas Torongo at (517) 780-7927 if you have any questions.

Sincerely,

Mary Ellen Cromwell

Mary Ellen Cromwell
District Supervisor
Surface Water Quality Division

Enclosure
cc: PCS Unit, SWQD, Permits Section, SWQD

PERMIT NO MIR000000

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq; the "Act"), and Michigan Act 245, Public Acts of 1929, as amended, (the "Michigan Act"), storm water associated with industrial activity, as defined under 40 CFR 122 26(b)(14)(i-ix) and (xi), or as deemed necessary under Section 402(o)(2)(E) of the Act, is authorized to be discharged from facilities in accordance with conditions set forth in this general permit.

The applicability of this general permit shall be limited to point source discharges of storm water (and non-storm water identified in Section I.C.3.b. of this general permit) which discharge either directly or via a storm sewer system to surface waters of the State, and which have not been determined by the Michigan Department of Natural Resources to need individual permits.

This permit is valid authorization to discharge only if accompanied by a Certificate of Coverage issued for an individual facility by the Michigan Department of Natural Resources.

This permit may authorize storm water discharges associated with industrial activity that are mixed with storm water discharges associated with construction activities provided that the storm water discharge from the construction activity is in compliance with Rule 2190 of the Part 21 Rules of the Michigan Act.

The terms and conditions of this general permit shall apply to an individual facility and shall take effect on the date of issuance of a Certificate of Coverage for the facility. The Michigan Commission of Natural Resources may grant a contested case hearing on this general permit in accordance with Section 8(3) of the Michigan Act. Also, the Michigan Commission of Natural Resources may grant a contested case hearing on the Certificate of Coverage issued to an individual facility under this general permit in accordance with R 323.2192(c) of the General Rules of the Michigan Act.

This general permit shall expire at midnight January 31, 1999.

Issued February 15, 1994

Russell Harding
Deputy Director for Environmental Protection

PART I

A. LIMITATIONS ON COVERAGE

1. Storm Water Discharges Not Covered by this General Permit

The following storm water discharges are not covered by this general permit:

a. Storm water discharges associated with industrial activity that are permitted by an existing NPDES individual permit or a different general permit.

b. Storm water discharges associated with construction activities as identified under 40 CFR 122.26(b)(14)(x).

c. Storm water discharges associated with industrial activity that have been determined by the Michigan Department of Natural Resources (the Department) to be contributing to unlawful pollution that cannot be adequately guarded against under the requirements of this permit, and there is or may be water quality degradation that will violate the Michigan Act unless requirements in addition to those in this general permit are imposed. Such a determination by the Department constitutes grounds for revocation of the Certificate of Coverage authorizing discharge under this general permit.

d. Storm water discharges associated with industrial activity from inactive mining, inactive landfill or inactive oil and gas operations occurring on federal lands where an operator cannot be identified.

e. Storm water discharges for which federal effluent limitation guidelines exist. The following list of industrial categories have storm water effluent limitation guidelines in the Code of Federal Regulations: cement manufacturing (40 CFR 411); feedlots (40 CFR 412); fertilizer manufacturing (40 CFR 418); petroleum refining (40 CFR 419); phosphate manufacturing (40 CFR 422); steam electric (40 CFR 423); coal mining (40 CFR 434); mineral mining and processing (40 CFR 436); ore mining and dressing (40 CFR 440); and asphalt emulsion (40 CFR 443 Subpart A).

f. Storm water discharges from facilities on Michigan's List of Sites of Environmental Contamination pursuant to the Michigan Environmental Response Act of 1982 Public Act 307, as amended, ("Act 307") where known or potential impacts on surface waters exist, and the Department has made a determination in accordance with Part I.A.1.c. of this permit.

g. Storm water discharge to groundwaters.

h. Storm water trapped in diked containment areas which are required by Pollution Incident Prevention Plans in accordance with the requirements of the Part 5 Rules of the Michigan Act, or by Spill Prevention Control and Countermeasure (SPCC) plans in accordance with 40 CFR 112.

PART I

Section A.

2. Individual NPDES Permit Holders

a. A facility that currently has an individual NPDES permit may submit a Notice of Intent (NOI) to be covered by this general permit for any discharges of storm water associated with industrial activity that are not already covered by the existing NPDES permit.

b. At the time the individual NPDES permit is to be reissued, the Department may choose to reissue that permit with or without storm water coverage included. If the Department chooses to include storm water coverage on the reissued individual NPDES permit, then the Certificate of Coverage for this general permit is automatically terminated on the effective date of the reissued individual permit.

c. Anyone authorized to discharge storm water under an individual NPDES permit, except when the individual permit contains numeric effluent limits on the storm water discharges, may request to have permitted storm water discharges covered under this general permit by submitting a Notice of Intent to be authorized to discharge under this general permit and requesting to have the storm water coverage in their individual permit terminated.

B. STORM WATER POLLUTION PREVENTION PLAN

1. Structure and Goals of the Plan

The permittee shall develop a storm water pollution prevention plan (plan) in accordance with good engineering practices. The goal of the plan is to maximize control of significant materials (as defined in Part I.C.9.c.) and reduce the level of such materials in storm water so that storm water discharges will not cause a violation of Michigan's Water Quality Standards. A schedule for achieving this goal is established in Part I.B.2. and I.B.3. of this permit. To meet this goal, the permittee shall develop a plan to achieve the following objectives:

a. identify a person or persons at the facility who shall have supervision over the inspection and management of storm water controls and who is or will be certified under Part I.B.2.a. or I.B.3.c.;

b. identify sources of significant materials (as defined in Part I.C.9.c.) that could mix with storm water and be discharged from the facility (Part I.B.5.);

c. identify non-structural controls to be used at the source to prevent significant materials from entering storm water (Part I.B.6);

d. provide structural controls, if needed, to prevent significant materials from entering storm water and to give additional control or treatment for storm water that has become contaminated by significant materials (Part I.B.7.);

e. ensure that the plan is regularly evaluated and updated (Part I.B.8.); and

f. ensure that only storm water is discharged from the facility or that non-storm water discharges are covered by an NPDES permit for such discharges (Part I.C.3.).

2. Schedule for Plan Preparation and Implementation - Existing Dischargers

a. Within one year after the effective date of the Certificate of Coverage for this permit, the permittee shall have a storm water operator certified by the Michigan Department of Natural Resources, as required by Section 6a of the Michigan Act. The certified operator shall have supervision over the facility's storm water treatment and control measures included in the plan.

b. Within 18 months after the effective date of the Certificate of Coverage for this permit, the permittee shall develop the plan. The plan shall be reviewed and signed by the certified storm water operator, and in accordance with Part II.B.4. of this permit. The permittee shall also certify in writing to the District Supervisor of the Surface Water Quality Division that the plan has been developed with the requirements of this permit and that all non-storm water discharges, other than those listed at Part I.C.3.b., have been eliminated or covered under a separate NPDES permit, or an application has been filed for coverage of such discharges under a separate NPDES permit.

Section B.2.

c. Within two years after the effective date of the Certificate of Coverage for this permit, the permittee shall complete implementation of the non-structural requirements of the plan (See Part I.B.6.), and the permittee shall certify in writing to the District Supervisor that the non-structural requirements of the plan have been implemented.

d. Within three years after the effective date of the Certificate of Coverage for this permit, the permittee shall have completed construction of and put into operation all structural storm water pollution control facilities identified in the plan (See Part I.B.7.). The permittee shall certify in writing to the District Supervisor that all structural controls have been completed.

3. Schedule for Plan Preparation and Implementation - New Dischargers

Facilities commencing storm water discharges associated with industrial activity on or after May 16, 1994 shall comply with the following schedule:

a. The plan shall be developed prior to the submittal of a NOI to be covered under this permit. A certification that the plan has been developed shall be submitted along with the NOI.

b. Facilities shall provide for compliance with the terms of the plan and this permit upon commencement of industrial activity. The permittee shall notify the District Supervisor of the Surface Water Quality Division of the commencement of industrial activity, and shall certify in writing that the facility is in compliance with the following elements of the plan and this permit:

1. the source identification requirements (Part I.B.5.);
2. the non-structural preventative measures and source controls (Part I.B.6);
3. the structural storm water pollution control requirements (Part I.B.7.) as needed; and
4. the prohibition of unauthorized non-storm water discharges (Part I.C.3.).

c. The permittee shall provide a certified storm water operator in accordance with the requirements of Part I.B.2.a.

4. Failure to Comply with Schedules for Plan Preparation and Implementation

Failure to meet the certification requirements and schedules listed in Part I.B.2. or I.B.3. (above) constitutes a violation of this permit. If such a violation should occur, the permittee shall provide written notification within 14 calendar days following the missed deadline to the District Supervisor of the Surface Water Quality Division. The permittee's written notification shall include identification of the requirement not completed, an explanation of the failure to meet the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be met.

PART I

Section B.

5. Source Identification

To identify potential sources of significant materials that can enter storm water and subsequently be discharged from the facility, the plan shall, at a minimum, include the following:

a. A site map identifying the following:

- buildings and other permanent structures
- storage or disposal areas for significant materials
- storm water discharge outfalls (numbered for reference)
- location of storm water inlets contributing to each outfall
- location of NPDES permitted discharges other than storm water
- outlines of the drainage areas contributing to each outfall
- structural runoff controls or storm water treatment facilities
- areas of vegetation
- areas of exposed and/or erodible soils
- impervious surfaces (roofs, asphalt, concrete)
- name and location of receiving water(s) and
- areas of known or suspected impacts on surface waters as designated under the Michigan Environmental Response Act of 1982, Public Act 307, as amended

b. An evaluation of the reasonable potential for contribution of significant materials to runoff from at least the following areas or activities:

- loading, unloading, and other material handling operations
- outdoor storage
- outdoor manufacturing or processing activities
- significant dust or particulate generating processes
- discharge from rooftop vents, stacks and air emission controls
- on-site waste disposal practices
- maintenance and cleaning of vehicles, machines and equipment
- other appropriate areas and
- sites of environmental contamination listed under Act 307

c. A list of all significant materials that could enter storm water. For each material listed, the plan shall include the following descriptions:

1. Ways in which each type of material has been or has reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, vessels; contact with storage piles; waste handling and disposal; deposits from dust or overspray, etc.)

2. Identification of the outfall or outfalls through which the material may be discharged if released;

3. A listing of oil and other polluting materials that have been spilled or leaked over the three years prior to the completion of the plan; the date, volume and exact location of release; and the action taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state. Any release that occurs after the plan has been developed shall be controlled in accordance with the plan and is cause for the plan to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss; and

Section B 5

d A summary of existing storm water discharge sampling data (if available) describing pollutants in storm water discharges associated with industrial activity at the facility This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

6. Preventive Measures and Source Controls, Non-Structural

To prevent significant materials from contacting storm water at the source, the plan shall, at a minimum, include the following non-structural controls:

a. A description of a program for routine preventive maintenance which includes requirements for inspection and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. A log of the inspection and corrective actions shall be maintained on file by the permittee, and shall be retained in accordance with Part I C 1

b. A schedule for comprehensive inspection of equipment, plant areas, and structural pollution prevention and treatment controls to be performed at least once every six months A report of the results of the comprehensive inspection shall be prepared and retained in accordance with Part I.C.1. The report shall identify any incidents of non-compliance with the plan or this permit. When a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with this permit.

c. A description of good housekeeping procedures to maintain a clean, orderly facility.

d. The plan shall specify material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The procedures shall identify measures to prevent the spilled materials from being discharged into storm water. The plan may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules of the Michigan Act, or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.

e. Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. The plan shall also identify measures used to control soil erosion and sedimentation.

f. A description of employee training programs which will be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the plan. The plan shall identify periodic dates for such training.

g. Identification of significant materials expected to be present in storm water discharges following implementation of non-structural preventative measures and source controls.

Section B.

7. Structural Controls for Prevention and Treatment

Where implementation of the measures required by Part I.B.6. does not control storm water discharges in accordance with Part I.B.1., the plan shall provide a description of the location, function, and design criteria of structural controls for prevention and treatment. Structural controls may be necessary:

a. to prevent uncontaminated storm water from contacting or being contacted by significant materials.

b. if preventive measures are not feasible or are inadequate to keep significant materials out of storm water. Structural controls shall be used to treat, divert, recycle, reuse or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with Michigan's Water Quality Standards as identified under Part I.C.2.

8. Keeping Plans Current

a. The permittee shall review the plan in accordance with the following schedule:

1. For existing dischargers, no later than 30 months after the effective date of the Certificate of Coverage and annually thereafter, and
2. For new dischargers, (see Part I.B.3.) no later than 12 months after the effective date of the Certificate of Coverage and annually thereafter.

Based on the review, the permittee shall amend the plan as needed to ensure continued compliance with the terms and conditions of this permit. The plan shall also be updated or amended whenever changes at the facility increase or have the potential to increase the exposure of significant materials to storm water, or when the plan is determined by the permittee or the District Supervisor to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity at the facility shall include a description of how the permittee intends to control any new sources of significant materials in accordance with the requirements of Parts I.B.5., I.B.6. and I.B.7.

b. The District Supervisor or authorized representative may notify the permittee at any time that the plan does not meet minimum requirements. Such notification shall identify why the plan does not meet minimum requirements. The permittee shall make the required changes to the plan within 30 days after such notification from the District Supervisor or authorized representative, and shall submit to the District Supervisor a written certification that the requested changes have been made.

9. Signature and Plan Review

a. The plan shall be signed by the certified operator, and by either the permittee or an authorized representative in accordance with Part II.B.4. of this permit. The plan shall be retained on site of the facility which generates the storm water discharge.

b. The permittee shall make plans, reports, log books, runoff quality data, and supporting documents available upon request to the District Supervisor of the Surface Water Quality Division or authorized representative.

C. SPECIAL CONDITIONS

1. Record Keeping

The permittee shall maintain records of all inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records shall be retained for three years.

2. Water Quality Standards

At the time of discharge, there shall be no violation of the Michigan Water Quality Standards (the Part 4 Rules of the Michigan Act) in the receiving waters as a result of this discharge. This requirement includes, but is not limited to, the following conditions:

a. In accordance with Rule 50 of the Part 4 Rules, the receiving waters shall not have any of the following unnatural physical properties in quantities which are or may become injurious to any designated use: unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge.

b. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, or deposits) shall be reported immediately to the District Supervisor 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.

3. Prohibition on non-storm water discharges

a. Discharges of material other than storm water shall be in compliance with an NPDES permit (other than this permit) issued for the discharge, except for discharges of non-storm water addressed under Part 1.C.3.b..

b. In addition to storm water, the following non-storm water discharges may be authorized by this permit provided pollution prevention controls for the non-storm water component are identified in the plan: discharges from fire hydrant flushing, potable water sources including water line flushing, irrigation drainage, lawn watering, routine building wash down which does not use detergents or other compounds, pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated ground water, and foundation or footing drains where flows are not contaminated with process materials such as solvents. Discharges from fire fighting activities are authorized by this permit, but do not have to be identified in the plan.

4. Reopener Clause

This general permit may be modified or, alternatively, revoked and reissued to comply with any applicable standard(s) or limitation(s) promulgated under Section 301(b)(2)(C-D), 304(b)(2) and 307(a)(2) of the Act, and Rule 2159 of the Michigan Act, that change, add to or are more stringent than the conditions of this permit.

Section C.

5. Requirements for Storm Water Discharges through Municipal Separate Storm Sewer Systems Serving a Population of 100,000 or More.

A storm water permit applicant or permittee who discharges storm water associated with industrial activity through a municipal separate storm sewer system serving a population of 100,000 or more* shall do the following:

a. Submit a copy of the Notice of Intent (NOI) to the operator of the municipal system.

b. Comply with applicable requirements in municipal storm water management programs developed under NPDES permits issued for the discharge of the municipal separate storm sewer system that receives the facility's discharge, provided the discharger has been notified of such conditions.

c. Make the plan available to the operator of the municipal system upon request.

6. Expiration and Reissuance of Certificate of Coverage

If the permittee wishes to continue authorization to discharge storm water in accordance with this general permit after its expiration date, the permittee shall submit a written request to the District Supervisor of the Surface Water Quality Division on or before August 4, 1998. A person holding a valid Certificate of Coverage under an expired general permit shall continue to be subject to the terms and conditions of the expired permit until the general permit is terminated, revoked, or reissued. Only those facilities authorized to discharge under the expiring general permit at the time of expiration are covered by the continued permit.

If this general permit is modified or reissued, the permittee shall be contacted by the Department at least 30 days prior to the effective date of the reissued or modified general permit and provided with the option to either: a) request coverage under the modified or reissued general permit, b) notify the Department of their intent to apply for an individual NPDES permit, or c) request termination of discharge authorization. If the permittee fails to choose one of these options, the permittee's authorization to discharge shall expire on the effective date of the reissued or modified general permit.

If this general permit is terminated or revoked, all authorizations to discharge under the general permit shall expire on the date of termination or revocation.

7. Termination of General Permit Coverage

Where all storm water discharges associated with industrial activity that are authorized by this permit are eliminated, the permittee may submit a request to the District Supervisor of the Surface Water Quality Division to end authorization to discharge under this general permit.

* As of the effective date of this general permit, the cities identified under Part I.C.5. were Ann Arbor, Flint, Grand Rapids, Sterling Heights and Warren.

Section C.

8. Individual Permit Required by the Department of Natural Resources

The Michigan Department of Natural Resources may require any person who is authorized to discharge storm water by a Certificate of Coverage and this general permit, to apply for and obtain an individual National Pollutant Discharge Elimination System (NPDES) permit if any of the following circumstances apply:

a. The discharge is a significant contributor to pollution as determined by the Department on a case-by-case basis;

b. The discharger is not complying or has not complied with the conditions of the general permit;

c. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of waste applicable to the point source discharge;

d. Categorical effluent standards and limitations are promulgated for point source discharges of storm water; or

e. The Department determines that the criteria under which the general permit was issued no longer apply.

Any person may request the Department to take action pursuant to the provisions of Rule 2191 of the Part 21 Rules of the Michigan Act.

9. Definitions

a. The Regional Administrator is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois, 60604.

b. The Michigan Department of Natural Resources Surface Water Quality Division's mailing address is P.O. Box 30273, Lansing, Michigan, 48909.

c. Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)(See 40 CFR 372.65); any chemical the facility is required to report pursuant to section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); salt and any material on the Critical Materials Register pursuant to Section 6b of the Michigan Act; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

d. NOI means Notice of Intent to be covered by this permit.

e. Polluting material means salt and any material listed on the Critical Materials Register as prepared by the Department pursuant to Section 6b of the Michigan Act, in solid or liquid form.

PART II

MANAGEMENT REQUIREMENTS

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the terms and conditions of this permit constitutes a violation of the Act and/or the Michigan Act, and constitutes grounds for enforcement action; for termination of the Certificate of Coverage, revocation of the Certificate of Coverage and issuance of an individual permit, or modification; or denial of an application for continued coverage.

2. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of oil or other polluting materials in accordance with Part 5 Rules of the Michigan Act.

3. Spill Notification

The permittee shall immediately report the spill or loss of any oil or other polluting materials which occurs to the surface waters or groundwaters of the state by calling the Department of Natural Resources 24-hour Emergency Response telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-8166).

Within ten (10) calendar days of the spill or loss, the permittee shall submit to the District Supervisor of the Surface Water Quality Division a full written explanation as to the cause and discovery of the spill or loss, clean-up recovery measures taken, preventative measures to be taken, and a schedule of implementation. This requirement is included pursuant to Section 5 of the Michigan Act.

In addition, the plan required under Part I.B. shall be reviewed by the permittee to identify measures to prevent the reoccurrence of such releases and to improve response to such releases, and the plan shall be modified where appropriate within 14 calendar days of knowledge of any spill or loss.

4. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of the plan. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

Section A.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface or groundwaters of the state resulting from noncompliance with this permit including, but not limited to, such monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

6. By-Passing

a. Bypass Prohibition - Bypass is prohibited unless:

1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

2. There was no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

3. The permittee submitted notices as required under Part II.A.6.b. or Part II.A.6.c. below.

b. Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the District Supervisor of the Surface Water Quality Division, if possible at least ten days before the date of the bypass, and provide information about the anticipated bypass as required by the District Supervisor. The District Supervisor may approve an anticipated bypass, after considering its adverse effects, if it will meet the three conditions listed in Part II.6.a. above.

c. Notice of Unanticipated Bypass - The permittee shall submit notice to the District Supervisor of an unanticipated bypass by telephone (1-800-292-4706 after hours) as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances.

d. Written Report of Bypass - A written submission shall be provided within five working days of commencing any bypass to the District Supervisor, and at additional times as directed by the District Supervisor. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

Section A.6. (continued)

e. Definitions

1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

7. Power Failures

In order to maintain compliance with this permit, the permittee shall either:

a. Provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with conditions of this permit; 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 conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the conditions of this permit.

8. Removed Substances

Solids, sludge, filter backwash, or other pollutants removed from or resulting from treatment or control of storm waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters, or the entry of toxic or harmful contaminants thereof onto the groundwaters in concentrations or amounts detrimental to the groundwater resource.

9. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with the prohibitions of this permit because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset shall notify the District Supervisor of the Surface Water Quality Division by telephone within 24 hours of becoming aware of such conditions and within five (5) days, provide in writing, the following information:

a. That an upset occurred and that the permittee can identify the specific cause(s) of the upset;

b. That the permitted storm water runoff control(s) were, at the time, properly operated and maintained; and

c. That the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

B. RESPONSIBILITIES

1. Right of Entry

The Department or any agent appointed by the Department may enter at all reasonable times in or upon any private or public property for the purpose of inspecting and investigating conditions relating to the pollution of any waters and the obstruction of the floodway of rivers and streams of this state. The Department may call upon any officer, board, department, school, university, or other state institution and the officers or employees thereof for any assistance considered necessary to carrying out of the Michigan Act.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, 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 District Supervisor of the Surface Water Quality Division.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act and Rule 2128 of the Part 21 Rules of the Michigan Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department 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. Signatory Requirements

All applications, notices of intent, reports or information submitted to the Department shall be signed and certified in accordance with 40 CFR 122.22.

5. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

6. Civil and Criminal Liability

Except as provided in permit conditions on "By-Passing" (Part II.A.6) pursuant to 40 CFR 122.41(m), and "Upset Noncompliance Notification (Part II.A.9.), pursuant to 40 CFR 122.41(n), 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 the permittee's 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 may be subject under Section 311 of the Act except as are exempted by federal regulations.

Section B.

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. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

10. Property Rights

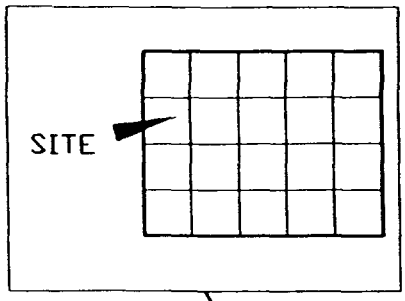
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals from other units of government as may be required by law.

11. Severability

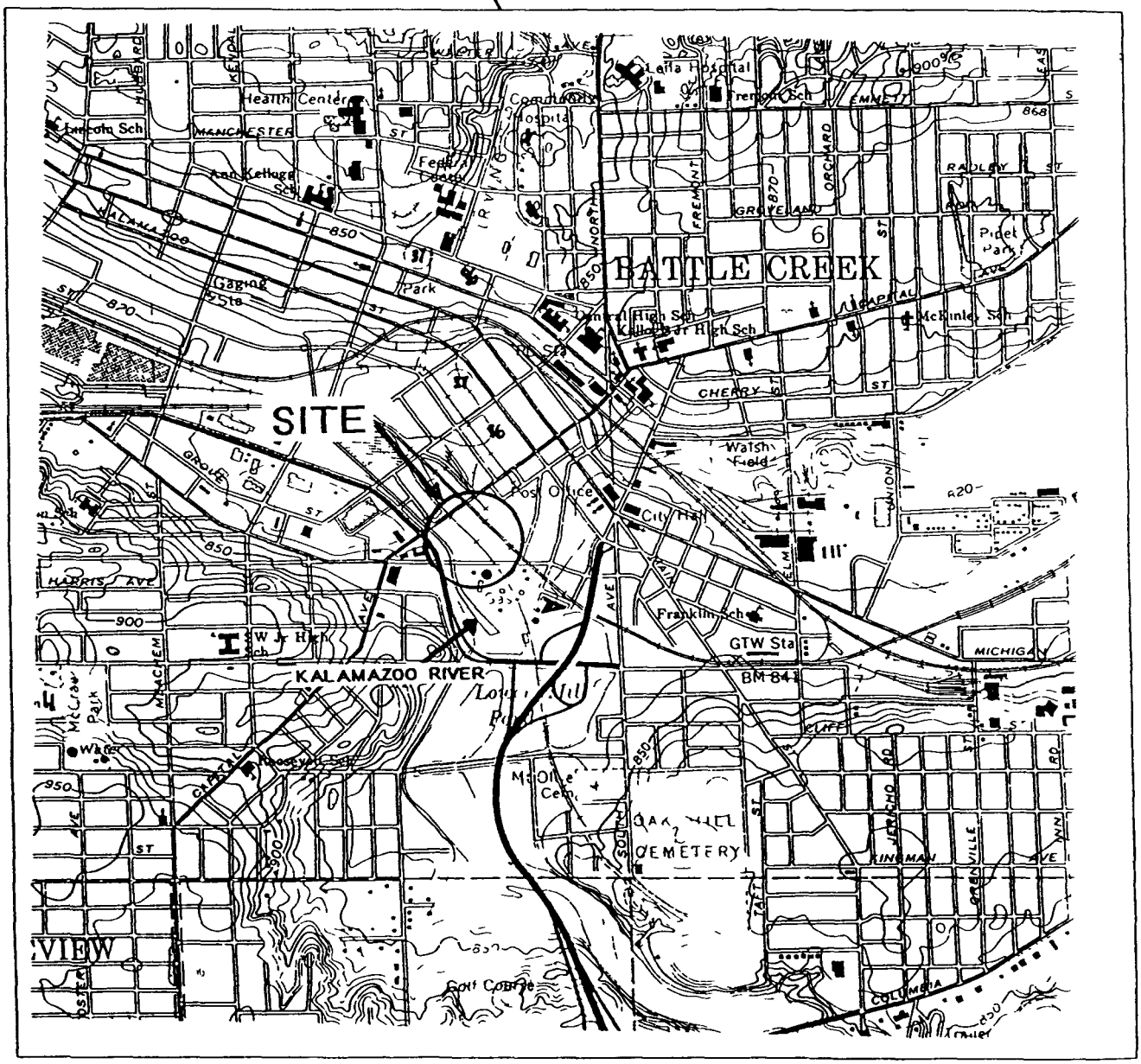
The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, if held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

12. Notice to Public Utilities (Miss Dig)

The issuance of this permit does not exempt the permittee from giving notice to public utilities and complying with each of the requirements of Act 53 of the Public Acts of 1974, being sections 460.701 to 460.718 of the Michigan Compiled Laws, when constructing facilities to meet the terms of this permit.



SECTION 1, T.2S. – R.8W.
CITY OF BATTLE CREEK
CALHOUN COUNTY
MICHIGAN



SITE LOCATION MAP

ADAPTED FROM USGS
BATTLE CREEK QUADRANGLE, 1961

<9601004> 50426W04 3/19/96
REVISIONS ARE TO BE MADE ON THE CADD FILE ONLY

MICHIGAN PAPERBOARD COMPANY

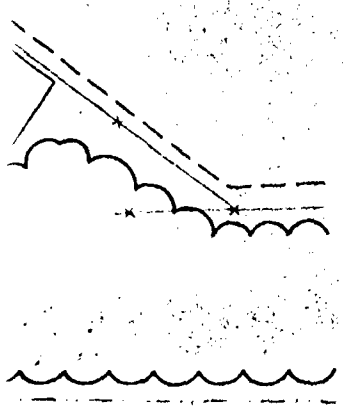
79 EAST FOUNTAIN STREET
BATTLE CREEK, MICHIGAN

950426

FIGURE

DELL ENGINEERING, INC.

Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263



VER

REV.	DATE	DESCRIPTION	BY	CHK

DELL ENGINEERING, INC.
Civil Engineering • Environmental Consulting
3352 128th Avenue, Holland, Michigan 49424-9263
PH: 616/399-3500 FAX 616/399-3777

MICHIGAN PAPERBOARD CO.

SCALE 1" = 50'	PROJECT NUMBER	DRAWN BY KLS
DATE 5/21/96	950426	CHECKED BY

STORM WATER SITE MAP

CADD FILE <G:950426> 50426W06 6/4/96
REVISIONS ARE TO MADE TO THE CADD FILE ONLY

SHEET

MICHIGAN PAPERBOARD COMPANY
SEMI-ANNUAL STORM WATER POLLUTION PREVENTION
INSPECTION REPORT FORM

1. Date of Inspection: _____

2. Certified Storm Water Operator Name: _____
   Certification Number: _____
   Certification Expiration: _____

3. Are the following storage areas clean and well-maintained to minimize exposure of significant materials to storm water:

a.	Bulk chemical and salt delivery area	YES	NO
b.	Enclosed dumpster	YES	NO
c.	Cyclones	YES	NO
d.	General storage area	YES	NO
e.	Storage Shed	YES	NO
f.	Required action:		

_____
_____
_____
_____

4. Are there any additional industrial activities exposed to storm water other than those mentioned above? Explain.

_____
_____
_____
_____

5. Inspect permitted Outfalls 001 and 002. Is there evidence of any of the following?

a.	Unnatural turbidity	YES	NO
b.	Color	YES	NO
c.	Oil film	YES	NO
d.	Floating solids	YES	NO
e.	Foams	YES	NO
f.	Settleable solids	YES	NO
g.	Suspended solids	YES	NO
h.	Deposits	YES	NO

i. Required action:

_____

_____

If any of the above are observed, immediately notify the MDEQ Jackson District Office, and provide a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

6. Indicate subject and time-frame of additional employee training required as a result of this inspection.

_____

_____

_____

7. Is the facility in compliance with the facility Storm Water Pollution Prevention Plan (SWP3) and the General Storm Water Permit for Industrial Activities? Explain.

_____

_____

_____

_____

8. Are the non-structural controls contained in Section 10.3 of the SWP3 being implemented? Explain.

_____

_____

_____

9. Is an update to the facility Storm Water Pollution Prevention Plan (SWP3) required as a result of this inspection? Explain.

_____

_____

_____

10. If this inspection does not identify any incidents of non-compliance, the certified storm water operator must certify the following statement:

"As the facility certified storm water operator, I certify that this facility is in compliance with the State of Michigan's General Storm Water Permit for Industrial Activities, NPDES Permit No. MIR000000."

Signature: _____

Date: _____

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

March 13, 1997

Mr. Matt Campbell
Department of Environmental Quality
Jackson District Office
State Office Building
301 E. Louis Glick Hwy.
Jackson, MI 49201-1556

Dear Matt:

Last week, I contacted you by phone to alert you that we had exceeded the Total Residual Chlorine (TRC) level of our NPDES permit. We had performed two tests which were beyond our limit of 36 ug/L. Michigan Paperboard Company's permit number is MI0001341.

	TRC Actual Value (ug/L)
Tuesday, March 4, 1997 - 4:30pm	110
Wednesday, March 5, 1997 - 9:30pm	100

This letter is being provided as written notification that this occurred and a summary of our investigation, actions, and findings to date.

A. Why did the Non-Conformance Occur?

On March 4th, we began a trial to determine if switching from sodium hypochlorite (bleach) to chlorine dioxide (ClO2) would be a more effective way to treat our "fresh water". We draw our fresh water from the Kalamazoo River. The ClO2 trial was on for part of the time before both of these samples were collected. We believe that during the trial we were generating the ClO2 at too high of a rate and that this is the reason for the high TRC values.

B. What Actions Did We Take?

1. As soon as the second test's value was known, we immediately made the decision to discontinue operating the ClO2 system. We also decided not to restart the sodium hypochlorite system. We decided that ClO2 would not be trailed again until the supplier of the system provided us more technical support to properly operate the system

ISO 9002

and that the impact of ClO2 or its by-products on the TRC in our outfall was better understood.

2. We also made an inspection of our water systems to look for non-normal uses of municipal water which could end up in our outfall to the Kalamazoo River. None were found. Any areas where municipal water could be used as a backup were all found to be closed or valved off.

3. On Tuesday, March 11th, we submitted an outfall sample to an independent laboratory for testing. This was done to verify that the accuracy of our Hach DR100 Colorimeter. The results indicate that our Hach test kit is reading accurately.

C. Long Term Measures Which Have Been Taken or are Being Planned as of March 13, 1997.

1. We are still working with the supplier of the ClO2 system to develop a plan for use. It has not been run since Wednesday, March 5th at 9:30 am.

2. We will be taking action to disconnect any municipal water backup lines that could cause us to exceed the TRC permit level.

We will keep you informed on our progress to use ClO2. If ClO2 can be used successfully, we will notify you of our interest to do so.

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

Sincerely,

Mike Scholly

Mike Scholly
Technical Superintendent

EQP 4612 1 (Rev 5/96)

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
SURFACE WATER QUALITY DIVISION DEQ

DAILY DISCHARGE MONITORING REPORT

Please refer to the reverse side of this report for information and instructions

PERMITTEE'S NAME: Michigan Carton and Paperboard Company
PERMITTEE'S ADDRESS: 79 East Fountain Street
CITY STATE ZIP CODE: Battle Creek, Michigan 49017

FACILITY NAME AND LOCATION (If different than Permittee):

DISCHARGE NUMBER: 001
PERMIT NUMBER: MI 0001341

MONITORING PERIOD

	YEAR	MONTH	DAY		YEAR	MONTH	DAY
FROM	97	03	01	TO	97	03	31

	PAR #	50050	00530	00530	00400	50060	50060	78739	00011	84130
	PARA METER	Flow conduit MGD	Solids - Suspended mg/L	Solids - Suspended lbs/Day	pH	CHLORINE, Total Residual	Chlorine, total residual	chlorination duration	Temp - Water F	Outfall observation
	LIMIT		Ave 20 - Max 30	Ave 534 - Max 800	Min 6.5 - Max 9.0	MAX - 0.36	MAX 0.2	mins / day		
DAY	UNITS									
01		2.0				0.02	0	1440		1
02		2.0				0.01	0	1440		1
03		2.0				0.02	0	1440		1
04		2.0				0.11	0	1440		1
05		2.0				0.10	0	300		1
06		1.8 GRAB	11	165.23	7.9	0.01	0	0	51	1
07		2.0				0.03	0	0		1
08		2.0				0.03	0	0		1
09		2.0				0.03	0	0		1
10		2.0				0.01	0	0		1
11		2.0				0.01	0	0		1
12		2.0				0.01	0	0		1
13		2.0 GRAB	24	400.56	7.9	0.02	0	0	53	1
14		2.0				0.01	0	0		1
15		2.0				0.01	0	0		1
16		2.0				0.01	0	0		1
17		2.0				0	0	0		1
18		2.0				0	0	0		1
19		2.0 GRAB	8	133.52	7.8	0.02	0	0	53	1
20		2.0				0.03	0	0		1
21		2.0				0.03	0	0		1
22		2.0				0.02	0	0		1
23		2.0				0.02	0	0		1
24		2.0				0.02	0	0		1
25		1.5				0.03	0	0		1
26		2.0				0.03	0	0		1
27		1.8 GRAB	10	150.21	7.9	0.01	0	0	56	1
28		2.0				0.02	0	0		1
29		2.0				0.02	0	0		1
30		2.0				0.02	0	0		1
31		2.0				0.03	0	0		1
	TOTAL	61.1	53.0	849.52	31.5	0.74	0	6090	213	31
	AVERAGE	1.971	13.3	212.38	7.9	0.024	0	196.5	53	1

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 possibility 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*

PRINTED NAME AND TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: John T. Goll, Jr
President

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: James M. Hartung N-2444

DATE: 04/08/97

PERMITTEE NAME: Michigan Carton and Paperboard Company
ADDRESS: 79 East Fountain Street
Battle Creek, Michigan 49017

N
49017

FACILITY LOCATION: BATTLE CREEK
ATTN: JOHN T GOLL JR

N
MI 49017

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)
(2-16) (17-19)

MI0001 341 — PERMIT NUMBER
001 A — DISCHARGE NUMBER

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

001 NONCT.COO.KALAMAZOO RIVER
(SUBR JJ)
F - FINAL
MINOR
EFFLUE
*** NO DISCHARGE |__| ***

12345

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	97	03	01	TO	97	03	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUANTITY OR CONCENTRATION (46-53) MINIMUM	(54-61) AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. FAHRENHEIT 00011 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	53	56	(15)	0	01/07	GRAB
	PERMIT REQUIREMENT	******	******	** ** * ***	******	REPORT MO AVG	REPORT DAILY MX	DEG.F		WEEKLY	GRAB
PH 00400 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		7.8	******	7.9	(12)	0	01/07	GRAB
	PERMIT REQUIREMENT	******	******	** ** * ***	6.5 DAILY MN	******	9.0 DAILY MX	SU		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED 00530 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	212.38	400.56	(26)	******	13.3	24.0	(19)	0	01/07	GRAB
	PERMIT REQUIREMENT	534 MO AVG	800 DAILY MX	LBS/DY	******	20 MO AVG	30 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT 50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	1.971	2.0	(03)	******	******	******		0		
	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	******	******	******	**** ****		DAILY	MEASRD
CHLORINE, TOTAL RESIDUAL 50060 C 0 1 SEE COMMENTS BELOW	SAMPLE MEASUREMENT	******	******		******	******	0.11	(28)	2		
	PERMIT REQUIREMENT	******	******	** ** * ***	******	******	36 DAILY MX	UG/L		DAILY	GRAB
CHLORINE, TOTAL RESIDUAL 50060 F 0 1 SEE COMMENTS BELOW	SAMPLE MEASUREMENT	******	******		******	******	0	(28)	0		
	PERMIT REQUIREMENT	******	******	** ** * ***	******	******	200 DAILY MX	UG/L		DAILY	GRAB
CHLORINATION DURATION 78739 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	******	******		******	******	1440	(58)	0		
	PERMIT REQUIREMENT	******	******	** ** * ***	******	******	REPORT DAILY MX	MIN/ DAY		DAILY	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: John T. Goll, Jr. President
TYPED OR PRINTED

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 POSSIBILITY 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.)*

James M. Hulsing W-2444
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
616	963-4004	97	04	08
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
C=CONTINUOUS-GREATER THAN 160 MIN/DAY
I=INTERMITTENT-LESS THAN/EQUAL TO 160 MIN/DAY

R=INTERMITTENT-LESS THAN/EQUAL TO

PERMITTEE NAME: Michigan Carton and Paperboard Company N
ADDRESS: 79 East Fountain Street
Battle Creek, Michigan 49017 49017

FACILITY N
LOCATION BATTLE CREEK MI 49017
ATTN: JOHN T GOLL JR

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
MI0001 341	001 A

Form Approved. OMB No. 2040-0004 Approval expires 05-31-98

001 NONCT.COO.KALAMAZOO RIVER
(SUBR JJ) 12345
F - FINAL
MINOR
EFFLUE
*** NO DISCHARGE |__| ***

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	97	03	01	TO	97	03	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUANTITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OUTFALL OBSERVATION, VISUAL, Y/N RESPONSE 84130 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	1	******	(94)	******	******	******		0		
	PERMIT REQUIREMENT	REPORT MO TOTAL	******	YES=1 NO=0	******	******	******	**** ****		DAILY	VISUAL
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
John T. Goll, Jr. President
TYPED OR PRINTED

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 POSSIBILITY 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.)*

James R. Hickey N-2464
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
616	963-4004	97	04	08
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
C=CONTINUOUS-GREAT THAN 160 MIN/DAY R=INTERMITTENT-LESS THAN/EQUAL TO 160 MIN/DAY

J. Hosking

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
Surface Water Quality Division

Incident No. _____ (D.N.R. use only)

REPORT OF POLLUTIONAL DISCHARGE OR ENVIRONMENTAL INJUR

This form is to assist in reporting events resulting in a Pollutional Discharge or which adversely affect the environment (air, land, water) or events resulting in a public health or safety hazard. The written report is intended to supplement telephone notification regarding such events.

Date: 9/23/91	Incident (Name of Person, Firm or Governmental Unit): MICHIGAN PAPERBOARD COMPANY.
Location of Incident (Be Specific): BATTLE CREEK, MI, CAPITAL AVENUE BETWEEN KALAMAZOO RIVER AND HAMBLIN AVENUE.	
Material Lost: Recycled Paper fiber + WATER	Amount: 100 Dry lbs., 1200 gal.
Name of Surface Water Involved: KALAMAZOO RIVER	
Date Incident was Discovered: 9/20/91	Time of Discovery: 8 10 AM
Name of Department of Natural Resources Representative Contacted: JEFF BRAUNSCHEIDEL (Jeff called Terry — Jim Hosking Reported incident to Battle Creek Treatment Plant @ 8 10 Am)	
Telephoned or Telegraphed by Whom: TERRY TIFFANY	Time: 3 30 pm

Cause of Incident (Include Type of Equipment and Other Details):
PAPERmill UPSET RESULTED IN INCREASED HYDRAULIC AND fiber Discharge to municipal SEWER AT 6 00 Am. TREATMENT PLANT WAS NOTIFIED OF INCREASED Discharge AT 6 00 Am. City SEWER COULD NOT HANDLE the Discharge, either because of a blockage OR the INCREASED SOLIDS AND overflowed manholes which then flowed INTO STORM DRAINS on CAPITAL AVENUE AND INT KALAMAZOO RIVER.

Nature of Incident (Include Complete Description of Damage):
NO TRACE OF MATERIAL WAS visible AND NO DAMAGE NOTED DOWN STREAM OF Discharge.

Additional Comments (Include Method of Control, Plans for Prevention of Recurrence, etc.):
City of BATTLE CREEK CLEANED OVERFLOW with "PELICAN" STYLE STREET CLEANER AND VACUUM TANK TRUCK.
SEWER MUST be ~~SE~~ INSPECTED for BLOCKAGE.

Name and Title of Person Submitting Report: JOHN. T. GOLL ASSISTANT TO THE PRESIDENT

By (Signature): John T. Goll

(Use other side or additional sheets as necessary)

Return this form to:
Department of Natural Resources
Surface Water Quality Division
301 E. Louis Glick Hwy.
Jackson, MI 49201

24 hour Emergency Notification Numb
1-800-292-4706

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

October 2, 2000

Mr. Andrew VanTil
MDEQ- Plainwell Division
1342 State Route W. 89
Plainwell, Michigan 49080

Re: Permit MI0001341

Dear Andrew:

Last week, I contacted you by phone to alert you that we had inadvertently exceeded the Total Residual Chlorine level of our NPDES Permit to the Kalamazoo River. On Thursday, 09/28/2000, the Total Residual Chlorine test results was **0.28** mg/L. This letter is being provided as written notification that this occurred and includes a summary of our investigation, actions, and findings to date.

A. Why did the Non-Conformance occur?

On 09/28/2000 City water was introduced in place of normal non-contact cooling because of a water line break. This was the sole reason for the high detection level of residual chlorine to the Kalamazoo River.

B. What Actions Did We Take?

The morning of 09/29/2000 the non-contact cooling stream was changed back to our normal non-contact cooling water. Water samples where taken and tested that afternoon 09/29/2000 and the test result for TRC discharge to the Kalamazoo River was **<0.02** mg/L.

C. Preventive Action Being Taken as of October 2, 2000

Management was notified that municipal water cannot be used as non-contact cooling water and discharged via the normal process.

If you have any questions, please call me.

Sincerely,

James M. Hosking
Assistant Technical Superintendent

cc: Mark Reed, Ron Fox, Barbara Russell

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

June 16, 2000

Mr. Andrew VanTil
MDEQ – Plainwell Division
1342 State Route W. 89
Plainwell, MI 49080

Re: Permit MI0001341

Dear Andrew:

I am writing to report an exceedance of outfall flow over the daily limit of 3.2 MGD for 06/14/2000. Our meter showed a flow of 4.944 MGD.

Dell Engineering is working with us to verify flow measurements. Recently a depth/velocity flow device was placed in our Parshall flume and the Daily Flow Readings where significantly less than the depth only measurement device that is presently used. We are working with Dell to determine the most accurate flow device for our outfall and conditions. (High river level)

If you have any questions concerning this, please let me know.

Sincerely,

James Hosking

Assistant Technical Superintendent

CC: Mark Reed, Ron Fox, Barbara Russell

ISO 9002

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

June 19, 2000

Mr. Andrew VanTil
MDEQ – Plainwell Division
1342 State Route W. 89
Plainwell, MI 49080

Re: Permit MI0001341

Dear Andrew:

I am writing to report an exceedance of outfall flow over the daily limit of 3.2 MGD for 06/18/2000. Our meter showed a flow of 3.2186 MGD.

Dell Engineering is working with us to verify flow measurements. Recently a depth/velocity flow device was placed in our Parshall flume and the Daily Flow Readings where significantly less than the depth only measurement device that is presently used. We are working with Dell to determine the most accurate flow device for our outfall and conditions. (High river level)

If you have any questions concerning this, please let me know.

Sincerely,

James Hosking

James Hosking
Assistant Technical Superintendent

CC: Mark Reed, Ron Fox, Barbara Russell

ISO 9002

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

May 21,2001

Mr. Andrew VanTil
MDEQ - Kalamazoo Field Office
7953 Adobe Road
Kalamazoo, Michigan 49009-5026

RE: NPDES Permit MI0001341

Dear Andrew:

As I noted on the telephone today, we have seen a significant level increase in the Kalamazoo River due to the rainfall events last week. This increase in level of the river causes our meter to read a higher inaccurate discharge flow, as you are aware of. We have been addressing this issue with our re-application of the permit. This letter is to inform you that due to the higher flow value we exceeded the Suspended Solids-Pounds per Day-Parameter of 800 pounds daily maximum on Friday, May 18,2001. The calculated total for suspended solids for the day turned out to be 872.70 pounds using 4.97 MGD; however, using last month's average flow of 2.21 MGD the solids would calculate to be 386.81 pounds and well within permit level. We believe our actual flow to be closer to the last month average than the reading given by our meter during high river conditions. If you have any questions regarding this matter, please contact me.

Sincerely,

James M. Hosking

James M. Hosking

CC: M. Reed
R. Fox
B. Russell

ISO 9002

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49017
616-963-4004
616-963-1306 FAX

March 13, 2001

Mr. Andrew VanTil
MDEQ-Kalamazoo Division
7593 Adobe Road
Kalamazoo, Michigan 49009-5026

RE: MI0001341

Dear Andrew:

Per our telephone conversation on Monday, March 12, I am writing to report an unintentional discharge of #6 Fuel Oil into our Outfall 001. To the best of our knowledge we believe that no greater than one quart could have been discharged. The occurrence started when a delivery fuel pump that feeds the burners to the boiler leaked into a concrete secondary containment area. While the secondary containment area captured the full quantity of the leak, oil seeped through the containment.

On March 11, during a routine inspection of the area a power plant operator noticed the problem and took immediate action. The oil was contained and leak stopped. The following is the corrective action plan:

1. Cease using the fuel pumps and burning oil until all repairs are completed.
2. Repair containment area to prevent further discharge.

We were unaware that the containment area would leak and we regret this happened. We feel that the immediate action we took prevented an environment disturbance to the receiving waterway.

If you have any question concerning the above information, please feel free to contact me.

Sincerely,

James M. Hosking

James M. Hosking

☒ REPAIR/INSPECT
☐ CHANGE
☐ HOUSEKEEPING

WORK ORDER

CAUTION PRESS HARD

Est. Cost _____

Approved By/Date _____

WORK ORDER NO. 33144

SECT. A

TYPE DOWNTIME REQUIRED: ☒ NONE

☐ #1 MACHINE ☐ #1 FILLER SIDE ☐ BACKLINER ☐ #1 COATER OFF ☐ POWER PLANT
☐ #2 MACHINE ☐ #2 FILLER SIDE ☐ TOPLINER ☐ #2 COATER OFF ☐ ANNUAL
☐ SHEETER MONTH _____

DEPT.	EP #	LOCATION	DATE	REQUESTED BY	SUPERVISOR

SECT. B

ROLL/ROTATING ELEMENT NO. REMOVED INSTALLED

DESCRIPTION OF SYMPTOM OR WORK:

DATE RECEIVED	INITIALS
DATE ASSIGNED	INITIALS

SECT. C

SEQUENCE OF WORK BY TRADE:

SECT. F

PRIORITY
☐ SAFETY
☐ EMERGENCY
☐ 1 = TODAY
☐ 2 = WITHIN 1 WEEK
☐ 3 = WITHIN 1 MONTH
☐ 4 = UNDER CONSIDERATION
☐ 1DT = DO NEXT DT
☐ 2DT = 1 DAY DT (12 HR)
☐ 3DT = 2 DAYS DT (48 HR)
☐ 4DT = 1 WEEK DT
☐ PROJECT - DEADLINE DATE _____

SECT. D

ACTUAL WORK PERFORMED & PARTS USED:	CODE	MAN HRS.	WORKER

PARTS HERE YES ☐ NO ☐

PARTS DUE HERE

LOCK OUT DATE ON _____ DATE OFF _____

NAMES _____

ROTATION CHECK-DATE

NAMES

CAUSE AND/OR RECOMMENDATION:

SECT. E

WORK STARTED;

WORK COMPLETED;

CARD FILLED OUT? ☐ YES ☐ NO

SUPERVISOR'S INITIALS OF WORK COMPLETED & INSPECTED BY:

A & B= BY REQUISITIONER/SUPERVISOR OR PLANNER

C = MAINT. SUPT. PLANNER D = WORKER E = MAINT. SUPERVISOR F = PLANNER

WHITE COPY - PLANNER BLUE COPY - TRADE GREEN COPY - WORKER GOLD COPY - ORIGINATOR

MPO4F
10/19/95

☐ REPAIR/INSPECT
☐ CHANGE
☐ HOUSEKEEPING

WORK ORDER

CAUTION PRESS HARD

Est. Cost _____

Approved By/Date _____

WORK ORDER NO. 33143

SECT. A

TYPE DOWNTIME REQUIRED: ☑ NONE

☐ #1 MACHINE ☐ #1 FILLER SIDE ☐ BACKLINER ☐ #1 COATER OFF ☐ POWER PLANT
☐ #2 MACHINE ☐ #2 FILLER SIDE ☐ TOPLINER ☐ #2 COATER OFF ☐ ANNUAL
☐ SHEETER MONTH _____

DEPT.	EP #	LOCATION	DATE	REQUESTED BY	SUPERVISOR
21					

SECT. B

ROLL/ROTATING ELEMENT NO. REMOVED INSTALLED

DESCRIPTION OF SYMPTOM OR WORK:

DATE RECEIVED	INITIALS

DATE ASSIGNED	INITIALS

SECT. F

PRIORITY
☐ SAFETY
☐ EMERGENCY
☐ 1 = TODAY
☐ 2 = WITHIN 1 WEEK
☐ 3 = WITHIN 1 MONTH
☐ 4 = UNDER CONSIDERATION
☐ 1DT = DO NEXT DT
☐ 2DT = 1 DAY DT (12 HR)
☐ 3DT = 2 DAYS DT (48 HR)
☐ 4DT = 1 WEEK DT
☐ PROJECT - DEADLINE
DATE _____

SECT C

SEQUENCE OF WORK BY TRADE:

SECT D

ACTUAL WORK PERFORMED & PARTS USED	CODE	MAN HRS.	WORKER

PARTS HERE YES ☐ NO ☐

PARTS DUE HERE

LOCK OUT DATE ON _____ DATE OFF _____

NAMES _____

ROTATION CHECK-DATE

NAMES

CAUSE AND/OR RECOMMENDATION:

SECT. E

WORK STARTED;

WORK COMPLETED,

CARD FILLED OUT? ☐ YES ☐ NO

SUPERVISOR'S INITIALS OF WORK COMPLETED & INSPECTED BY·

A & B= BY REQUISITIONER/SUPERVISOR OR PLANNER

C = MAINT. SUPT. PLANNER D = WORKER E = MAINT. SUPERVISOR F = PLANNER

WHITE COPY - PLANNER BLUE COPY - TRADE GREEN COPY - WORKER GOLD COPY ORIGINATOR

MPO4F
10/19/95

WASTE MANAGEMENT DIVISION
MICHIGAN DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

Part 121 of Act 451, 1994, as amended

Failure to file may subject you to criminal and/or civil penalties under Sections 324 11151 or 324 12116 MCL

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MID072508165 Manifest Document No. 11032
2. Page 1 of 1

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

3. Generator's Name and Mailing Address
MICHIGAN PAPERBOARD COMPANY
79 EAST FOUNTAIN STREET
BATTLE CREEK, MI 49017

A. State Manifest Document Number MI 7411032
B. State Generator's ID

4. Generator's Phone (616) 963-4004 ATTN: GARY MC MILLAN

5. Transporter 1 Company Name: TAPLIN ENVIRONMENTAL CONTRACTING CORP
6. US EPA ID Number: MID017167222
C. State Transporter's ID
D. Transporter's Phone 616.375-0595

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

9. Designated Facility Name and Site Address
AUTUMN HILLS RDF
700 56TH AVENUE
ZEELAND, MI 49464
10. US EPA ID Number: MID085665025
G. State Facility's ID
H. Facility's Phone 616-772-5777

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NOT D.O.T. REGULATED LIQUIDS (WASTE NON HAZARDOUS #6 FUEL OIL AND WATER)		001	TT	350	G	D291
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
11a WASTE NON HAZARDOUS #6 FUEL OIL AND WATER)
APPROVAL NUMBER: 16-0014

K. Handling Codes
a
b
c
d

15. Special Handling Instructions and Additional Information
IN AN EMERGENCY TELPHONE 616/375-0595
JOB #24900-S

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Pete Grevers
Signature: Pete Grevers
Date: Month 03 Day 16 Year 01

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Mike Richmond
Signature: Mike Richmond
Date: Month 03 Day 16 Year 01

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

TRANSPORTER

19. Discrepancy Indication Space

FACILITY

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

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

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

To be mailed by Generator to:
WASTE MANAGEMENT DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30038
LANSING MI 48909-7538

EQP 5110
Rev 5/98

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT

Kenneth H. Tsuchiyama, Director

Gregory N. Zanotti, P.E., City Engineer **Linda L. Ross-Sides, Deputy Public Works Director**

August 21, 1995

Mr. Jim Lambert
Operations Manager
Michigan Paperboar
79 E. Fountain Stre
Battle Creek, MI 4

Dear Mr. Lambert,

Michigan Paperboard Company has requested an addendum to their wastewater treatment contract with the City. The request included increases in flow, suspended solids, and biological oxygen demand. A resolution authorizing the City Manager to enter into the addendum has been approved by the Battle Creek City Commission. A copy of the resolution is attached for your information.

Please contact me at your convenience if you have any questions concerning this matter.

Sincerely,

Charles K. Kohs, P.E.
Environmental Services Administrator
Public Works Department

c P. Levy, City Attorney
K. Tsuchiyama, Public Works Director

cf

Director (616) 966-3343

City Engineer	(616) 966-3343	Public Service Division	(616) 966-3507
Deputy Director	(616) 966-3343	Wastewater Division	(616) 966-3513
Engineering Division	(616) 966-3343	Water Division	(616) 966-3496

P.O. Box 1717, Battle Creek, Michigan 49016-1717

RESOLUTION

APPROVED

A RESOLUTION AUTHORIZING THE CITY MANAGER TO ENTER INTO FIRST ADDENDUM, WASTEWATER TREATMENT CONTRACT - 1984, WITH MICHIGAN PAPERBOARD COMPANY FOR INCREASED CAPACITY AT THE WASTEWATER TREATMENT PLANT

NO. 440

Public Works
WWTP
MPC ✓
Finance

08/15/95

BATTLE CREEK MICH., _____

Resolved by the Commission of the City of Battle Creek:

WHEREAS, Michigan Paperboard Company has requested an increase in their discharge limits for wastewater treatment under their current contract with the City, and

WHEREAS, the City's Wastewater Treatment Plant has the ability to accept the increased capacity under the Company's request,

NOW, THEREFORE, BE IT RESOLVED that the City Manager is hereby authorized to enter into the attached First Addendum, Wastewater Treatment Contract - 1984, with Michigan Paperboard Company.

CITY OF BATTLE CREEK
INTER-OFFICE MEMORANDUM

Date: 6/22/95

To: Paul Levy, City Attorney

From: Ken Kohs, Environmental Services Administrator CKK

SUBJECT: **Wastewater Treatment Plant--Industrial Discharge Request**

The Michigan Paperboard Company and Waldorf Corporation have requested increases in their discharge limits for wastewater treatment under their current contracts with the City. These requests are documented in the attached correspondence. Under each of the companies' contracts, they are able to request an increase in their discharge limits by up to 50% of the available capacity at the plant. These requests require City Commission authorization. Walt Thompson, WWTP Superintendent, has provided information concerning the WWTP's current capacity and current flows as shown in the attached correspondence. The current available capacity for sewage solids at the plant is 47,588 pounds per day, which is the difference between the plant capacity and current flow. Fifty percent of this amount is 23,794 pounds per day. Michigan Paperboard's and Waldorf's combined request would generate 9,760 pounds per day of sewage solids. Therefore, the City has the ability to accept both companies' requests for increases in the discharge limits under their contracts.

The Department of Public Works recommends granting the requests of Michigan Paperboard Company and Waldorf Corporation for increases in their discharge limits. Please prepare the appropriate resolutions for City Commission action on this issue. Contact me at your convenience if I can be of further assistance in this matter.

Atch

cc: K. Tsuchiyama, Public Works Director
W. Thompson, WWTP Superintendent
M. Andrews, Ind'l & Sludge Analyst

cf

RECEIVED
JUN 26 1995
LEGAL DEPT.

CITY OF BATTLE CREEK
INTEROFFICE MEMORANDUM

June 20, 1995

TO: Charles K. Kohs, Environmental Services Administrator

FROM: Walter L. Thompson, Wastewater Division Superintendent WLT

RE: CURRENT PLANT CAPACITY -- MPC & WALDORF CORPORATION DISCHARGE REQUESTS

In response to your request for information regarding the Battle Creek Treatment Plant's (BCTP) loading capacity, the following data has been calculated based on current plant performance under current plant conditions. Changes in the volume or the characteristics of the Suspended Solids, BOD-5, or in the performance of the still untested solids handling processes may increase or decrease the plant's ability to reach the levels indicated.

The current treatment plant capacity is 28 MGD (million gallon per day); 102,982 Lbs/Day (Pounds/Day) of BOD-5; 88,879 Lbs/Day Suspended Solids; and 99,360 Lbs/Day of incinerator loading or Sewage Solids at an assumed 10% down time for maintenance. (See attachment for detail.)

The Wastewater Treatment Plant's current Flow which is based on existing Contract limits and Non-Contract Users is 17.328 MGD, 64,110 Lbs/Day BOD-5; 34,577 Lbs/Day Suspended Solids; and 51,772 Lbs/Day of Sewage Solids. The current data does not include the increased capacity requested by Michigan Paperboard (MPC) or Waldorf Corporation (WC).

Michigan Paperboard Corporation (MPC) has requested an increase in discharge limits of 6,750 Lbs/Day of BOD-5; 5,000 Lbs/Day of Suspended Solids, and a decrease of Flow from 2.5 MGD to 2.0 MGD. This increase in BOD-5 and Suspended Solids will generate an additional 7,192 Lbs/Day of Sewage Solids. Waldorf Corporation (WC) has requested a BOD-5 discharge increase of 1,750 Lbs/Day and a Suspended Solids increase of 2,000 Lbs/Day which will generate 2,568 Lbs/Day of Sewage Solids.

The Plant's ability to provide adequate destruction of Sewage Solids has changed dramatically since the last Contract Customer's request, but Sewage Solids remains the determining factor for setting limits for additions to our system. Our current available Sewage Solids per Contract is 50% of 47,588 Lbs/Day or 23,794 Lbs/day which should be more than adequate to meet both MPC and WC's requests. The total combined requests would generate 9,760 Lbs/Day of Sewage Solids.

If you wish additional information, please contact me.

cc: File

CITY OF BATTLE CREEK
WASTEWATER DIVISION
PLANT CAPACITY

	PLANT CAPACITY LBS/DAY	CURRENT CONTRACT AND NON-CONTRACT USERS LBS/DAY	AVAILABLE CAPACITY LBS/DAY
BOD-5	102,982	64,110	38,872
SUSPENDED SOLIDS	88,879	34,577	54,302
SEWAGE SOLIDS	99,360	51,772	47,588

BOD-5 Lbs/Day X Solids Generation Factor = Sewage Solids Lbs/Day

BOD-5 Sewage Solids + Suspended Solids = Total Sewage Solids

BOD-5 Capacity Based on 55 Lbs/1,000 Cubic Feet of Available Aerator Space. (55 Lbs/Day X 1,350,000/1,000) + Primary BOD-5 Removal Rate

Suspended Solids Capacity based on Primary Clarifier Solids Loading Rate

NOTE: Our ability to stabilize and process Sewage Solids for Land Application is still tested and it can have a big impact on our future capacity and construction plans.

MICHIGAN PAPERBOARD COMPANY

79 East Fountain Street
Battle Creek, Michigan 49016
616-963-4004

May 31, 1994

Mr. John F. O'Brien, P.E.
Public Utilities Manager
Public Works Department
City of Battle Creek
PO Box 1717
Battle Creek, MI 49016

Dear John:

Michigan Paperboard has analyzed anticipated future requirements.

The company desires that the quantities of waste treatment capacity be changed so that the City shall treat the following average monthly amounts:

Flow.....	2,000,000 Gallons Per Day
Suspended Solids.....	10,000 Pounds Per Day
Biochemical Oxygen Demand.....	10,000 Pounds Per Day

Please contact me with your response or any questions.

Sincerely,

Jim Lambert

Jim Lambert
Operations Manager

JL:jb

xc: John Goll
Jim Hosking

RECEIVED
JUN 6 1994
PUBLIC SERVICE
CITY OF BATTLE CREEK
MICHIGAN

FIRST ADDENDUM

WASTEWATER TREATMENT CONTRACT - 1984

This Agreement is effective the 17th day of August 1995 between the City of Battle Creek, a Michigan municipal corporation, whose address is P. O. Box 1717, Battle Creek, MI 49016-1717, hereinafter "City", and Michigan Paperboard Company having an office an 79 East Fountain Street, Battle Creek, MI 49017, hereinafter "Company".

RECITALS

A. The parties entered into a certain Wastewater Treatment Contract effective the 1st day of April 1986 wherein City agreed to treat Company's discharge of industrial and sanitary waste in the City's existing Wastewater Treatment Plant.

B. Pursuant to paragraph 1 of that Contract, Company reserved certain flows and concentrations of wastewater based on a per day amount to be treated by the City.

C. The Company has, pursuant to paragraph 9 of the Contract, given notice to the City that it desires to increase the quantities of waste treatment capacity set forth in paragraph 1 of that Contract, and City has determined, pursuant to paragraph 9, that certain additional capacity is available to Company under terms and conditions set forth in the Contract.

AGREEMENT

1. The parties do hereby amend paragraph 1 of the Wastewater Treatment Contract - 1984 between the parties to read as follows:

1. Treatment. The City shall treat the wastewater discharges from the Company during the term of this Contract at

its Wastewater Treatment Plan in the amounts set forth below. City has made and will keep available to the Company, as long as it desires to utilize them and on the terms and conditions hereinafter set forth, facilities for the collection and treatment to the extent required by law of the Company's waste in the following average monthly amounts:

Flow	2,500,000 gallons per day
Suspended Solids	10,000 pounds per day
Biochemical Oxygen Demand	10,000 pounds per day

2. Company agrees to pay capital charges as set forth in paragraph 4 and Exhibit A of the Contract for the amounts contained in paragraph 1 in the original Contract and to pay for the additional amounts of 5,000 pounds per day suspended solids, and 6,750 pounds per day BOD, pursuant to Exhibit C of the original Contract for the fiscal year ending June 30, 1996. The capital cost for increased capacity as set forth on that Exhibit are $20.86 per thousand pounds per day of suspended solids, and $25.45 per 1,000 pounds per day of BOD. Said increased charges shall continue on and be imposed from August 1, 1995 until September 2, 2003, without regard to the actual flows or loadings Company deliver to the wastewater system of the City.

3. The capital amounts due from Company to City under the Contract and this Addendum are set forth in Exhibit A to this Addendum and constitute capital charges to be paid by Company without regard to the quantity of wastewater delivered to the City in the amounts and for the duration as set forth on said Exhibit A.

4. City and Company agree that in all other respects the Wastewater Treatment Contract - 1984 between the parties shall remain in full effect and shall continue according to its original terms, except as modified by this Addendum or by future Addendums.

CITY OF BATTLE CREEK

BY: Rance L. Leaders
City Manager

MICHIGAN PAPERBOARD COMPANY

BY: John T. Goll, Jr
Its: President

WASTEWATER TREATMENT CONTRACT - 1984

THIS AGREEMENT, effective the first day of April, 1986, between the CITY OF BATTLE CREEK, MICHIGAN, a Municipal Corporation ("City"), and MICHIGAN HOLDING CORPORATION, A Delaware Corporation, having an office at 79 East Fountain Street, Battle Creek, Michigan 49015 ("Company"),

W I T N E S S E T H:

WHEREAS the Company operates facilities in the City of Battle Creek that discharge industrial and sanitary waste into the City's existing wastewater treatment plant ("Treatment Plant"); and

WHEREAS the Company and its predecessors and the City have had contractual relationships for the treatment of Company's wastewater since 1959; and

WHEREAS the City has during this contractual period reserved for the Company certain capacity in its wastewater treatment plant and the Company has made certain annual payments toward the local cost of constructing the improvements necessary to treat Company's discharges; and

WHEREAS the City was recently required to expand and upgrade its wastewater treatment facilities; and

WHEREAS certain federal and state regulations require that the user charges be spread among all users of the Wastewater Treatment Plant on the basis of the use of said facility;

NOW, THEREFORE, in consideration of the mutual promises made herein the City and the Company agree as follows:

1. Treatment. The City shall treat the wastewater discharges from the Company during the term of this Contract at its Wastewater Treatment Plant in the amounts set forth below. City has made and will keep available to the Company, so long as it desires to utilize them and on the terms and conditions hereinafter set forth facilities for the collection and treatment to the extent required by law of the Company's waste in the following average monthly amounts:

Flow	2,500,000 gallons per day
Suspended Solids	5,000 pounds per day
Biochemical Oxygen Demand	3,250 pounds per day

2. Treatment Plant. The City shall maintain and operate its Treatment Plant as enlarged and its sanitary sewer system serving the Company's plant in good repair and working order and will make or cause to be made all necessary renewals and replacements.

3. Flow Meters, Sampling, Testing and Monitoring Devices.

a) During the term of this Contract, wastewater discharged by Company shall be measured at Company's locations so as to determine flow, suspended solids and BOD and such other measurements required by the appropriate state or federal agency, actually delivered to the collection system of City. Said measurements shall be made by flow meters, sampling and testing devices which shall be installed by Company at its expense. The City shall calibrate, maintain and replace said devices at City's expense. The City will have access to the flow meters at all times. Testing of samples shall be performed in accordance with procedures set forth in the latest edition of Standard Methods For The Examination Of Water and Wastewater or such other standards as may from time to time be mutually agreeable. The City will report in writing to the Company by the fifteenth day of each month the result of its measurements, tests, and most recent calibration reports of the quantities and characteristics of the waste discharged by the Company into the City's sewer system during the preceding month. Sampling and testing shall be conducted with such frequency and on such

operating and non-operating days of the Company as will fairly reflect the representative amounts and characteristics of the Company's waste discharge into the City's sewer system. The City shall check and calibrate the waste flow meter on site in accordance with manufacturer's instructions at a minimum frequency of once every three months. The City shall notify Company prior to calibration so industry may have a representative present during calibration.

b) In the event that the City and the Company jointly determine that the volume of wastewater transmitted to the point of recording has not been recorded accurately for any period of time, the City and Company shall estimate the volume and characteristics of wastewater transmitted to the point of recording during such period of time by use of the present and prior meter readings, production operation experience, records, and such other data as may be available to assist in making such estimate.

c) The Company may, at its own expense, make such measurements and tests as it shall desire of the

quantities and characteristics discharged by the Company into the City's sewer system. If Company and City tests do not substantially show the same quantities and characteristics of such waste discharged by the Company into the City's sewer system, competent independent engineers acceptable to the City and the Company shall make such measurements and tests and their determination of the quantities and characteristics of the waste discharged by the Company into the City's system shall be final and binding on the parties. The cost of such independent review shall be borne by the Company unless the independent review demonstrates that the results of the City's sampling and testing have resulted in billing cost errors of ten (10%) percent or greater within one billing period, in which case the cost of such review shall be borne by the City.

4. Capital Charges.

a) Company agrees to compensate the City for that portion of the Wastewater Treatment Plant constructed since 1959 for the purpose of treating waste discharged by Company and upgrading facilities necessary to treat

Company's waste to the degree required by law. As long as Company does not exceed its purchased capacity on an annual basis, the Company is not responsible for and will not be charged for capital cost of the Wastewater Treatment Plant associated with expansion of the Plant. The capital charges heretofore incurred by Company in the 1959 contract and the 1967 supplement as shown in Exhibit A are continued and Company further agrees to undertake to pay capital charges for upgrading required to provide a greater degree of treatment and/or greater reliability of treatment only if required by State or Federal law or regulation. The total annual capital charges will be as shown in Exhibit A as written or as hereafter modified by increase or reduction of capacity set forth in Paragraph 1.

b) Company obligates itself to pay the charges for capital set forth above and for the times set forth in Exhibit A throughout the term of this Contract whether Company continues discharging wastewater into City's system or not, except as Company's liability may be modified under Paragraphs 8 or 9 of this Agreement. Company's operating and maintenance rate set forth in

Paragraph 5 of this Contract shall take into account that capital charges are separately paid for and are not included in the operation and maintenance rate, including contribution to the replacement fund set forth in Paragraph 21. Even after capital obligations as set forth in Exhibit A are fully paid by Company, Company shall not be charged capital charges for those improvements added in 1959, 1967 and 1978 through 1985 in its operation and maintenance charges for capacity reserved under this Contract.

c) Any future upgrading of facilities maintained to serve Company, under this Contract, necessitated by state or federal law will, at the Company's option, be paid for in additional capital charges in an amount negotiated and agreed upon by the parties or as part of the monthly rate for sewer service. Company shall elect either the additional capital cost charge or monthly rate method for payment of improvements necessary for upgrading within one hundred eighty (180) days of notification by City that such additional construction will be undertaken to meet State or Federal law or regulations.

d) City shall use its best efforts to notify Company within ninety (90) days of any event which could possibly cause any change in the capital charges set forth in Exhibit A, including without limitation the retention of an engineering or construction firm by the City concerning additions or modifications to the Battle Creek wastewater facility, any proposed construction, expansion or upgrading plans concerning said facility, any order issued by the Water Resources Commission, Department of Natural Resources or any other state or governmental order which could require a change in the capital investment of the facility and City agrees to discuss such events with Company.

e) In order for any increase in capital charges to be effective, City shall notify Company at least one hundred eighty (180) days prior to the effective date of any proposed increase in the capital charges set forth in Exhibit A and shall discuss such proposed increases with Company prior to implementation.

f) The 1980 estimated costs will be updated to reflect actual costs within ninety (90) days of the final audit

of the construction costs accepted by EPA. Updated Exhibits A, B and C will be prepared to reflect any changes. Adjustments to charges will be made from the effective date of this Contract.

5. Operation, Maintenance and Replacement Charges. Company also agrees to pay City for the collection and treatment of the Company's wastewater discharges in accordance with rates charged below. The rates to be charged for said discharges shall be developed and established from time to time in accordance with applicable federal and state regulations for use charge systems. City agrees that the rates established shall be supported by rate studies according to accepted practices and shall be reasonable in relation to the cost of service. The City will notify industry when City intends to undertake a rate study. Changes in the operation, maintenance and replacement rate will be imposed only after a sixty (60) day notice by City to Company that the rate study is complete.

6. Penalty Charges. In addition to capital charges and operation and maintenance charges set forth above, Company will pay the City a penalty as determined and provided in

Exhibit B attached hereto and made a part hereof, on all quantities of the Company's daily waste averaged over each calendar month that are in excess of the total treatment capacity reserved for the Company and set forth in Paragraph 1 above. The penalty shall remain in effect as long as the Company's waste is discharged to the Treatment Plant. Notwithstanding this paragraph, Company shall have no right to discharge amounts in excess of the amounts set forth in Paragraph 1 and City may prohibit discharges in excess of those amounts.

7. Billing. The Company shall be billed by the City on a monthly basis and the billing shall contain four separate items: a) Capital Charges: a charge of 1/12th of the total annual capital charge applicable to the Company as calculated from Exhibit A for each of the improvements so long as a portion of that improvement remains unpaid. b) Operation and Maintenance Charges: a charge at the unit rates for the treatment of the waste delivered by the Company to the City during the billing period; c) Penalty Charges: the penalty as set forth in Exhibit B; and d) Monitoring Charges: the pro-rata share of actual costs per the latest rate study for monitoring the Company's effluent.

8. Decrease of Capacity.

a) Prior to the termination under Paragraph 13 of the Company's obligation to pay capital charges, the Company may obtain a reduction or termination of the charges as provided in this paragraph. At any time that the Company signifies in writing to the City Manager its offer to surrender a part or all of the waste treatment capacity reserved for the Company as specified in Paragraph 1, the City will promptly cause a survey to be made by competent independent engineers of the current use of its Treatment Plant and notify other companies with contracts substantially the same as this one of that request.

b) If such survey shows that the capacity proposed to be surrendered by the Company is capacity that has been allocated to Company's capital charge and is being used to treat the sewage or waste of other customers, or that there is a current demand for such use by other customers, then the cost of such engineering survey will be borne by the City and the Company equally and this Contract will be and stand amended to reduce the annual

waste disposal charge in proportion to the amount of its total reserve treatment capacity that the Company has offered to surrender and thereafter the obligation of the City to provide waste treatment capacity for the Company shall be reduced accordingly.

If more than one company which has an industrial wastewater contract with the City of Battle Creek substantially the same as this Contract, desires to decrease its purchased capacity within the same thirty-day period and the survey shows that the total requested reduction in capacity of all requesting companies is greater than the offset capacity to be used by other customers, the capacity of each requesting company will be reduced in proportion to the requested amounts of decrease.

In the event the survey permits the Company to surrender all of the capacity reserved for it, and Company so elects, then this Contract shall automatically terminate upon payment by the Company of all charges then due and owing by it hereunder.

c) In the event that such engineering survey fails to show that the plant capacity proposed to be surrendered by the Company is then being used to treat the sewage or waste of other customers or that there is a current demand for such use by other customers then the Company shall pay the entire cost of such survey and may either give up as much of its capacity as the survey would permit with the appropriate reductions as set forth in Paragraph 8a or shall continue to pay the capital charges as set forth in Paragraph 4 with full rights under this Contract. The Company may from time to time request a resurvey of the plant under the same terms and conditions as set forth above, if in its judgment circumstances now indicate that the capacity reserved for Company is now being used to treat the sewage or wastes of other customers, or that there is a current demand for such use by other customers.

d) City agrees to provide Company with an annual report containing data regarding the use of the Wastewater Treatment Plant including data about the flow and loadings experience over the past year and a projection

of the flow and loadings for the on-coming year within thirty days after the close of the fiscal year.

9. Increase of Capacity. The Company may at any time give notice to the City that it desires that the quantities of waste treatment capacity set forth in Paragraph 1 of this Contract reserved for the Company at the City's sewage Treatment Plant be increased by the amount set forth in said notice. The City shall notify the Company within ninety (90) days from the date of such notice the total plant capacity available. The cost of additional capacity will be as set forth in Exhibit C, using the date of Company's notice to determine the year. Payments will continue at that amount until September 30, 2003. Company may purchase up to one-half the capacity stated by City to be available and may not purchase additional capacity for twenty-four (24) months.

If Company disagrees with the City as to the availability or amount of unused capacity, the City and Company shall meet to agree upon retaining an independent engineering consultant who shall make a survey of the available capacity. At the conclusion of such study Company may elect to purchase such additional capacity as set forth

in its notice up to one-half the amount the consultants agree are available at the cost set forth above. Company shall have a period of ninety (90) days after its receipt of the consultants' report to inform the City of its decision to purchase additional capacity. The cost of the consultants shall be shared equally if the Company buys the capacity it stated it desired in its notice to the City or all of the capacity permitted, whichever is less. In all other cases the Company shall pay the entire cost of the consultants retained for the purposes set forth in this paragraph.

If Company elects to purchase the additional capacity, the sewage treatment capacity set forth for the Company in Paragraph 1 shall be deemed increased by the amounts agreed upon and the annual capital waste charge set forth in Exhibit A shall be increased accordingly and the penalty charges to be paid by the Company under Paragraph 6 and set forth in Exhibit B shall be determined after such date on the basis of such increased capacity reserved for Company.

10. Most Favored Rate Clause. If at any time before the termination of the Company's obligation under this Contract the City enters into a contract agreement rate

structure or other arrangement which provides wastewater disposal to any industrial user on terms more favorable than the terms set forth in this Contract, the Company may at its option elect to have its wastewater treated under the same terms, if said terms can be granted to Company under state and federal regulations, and this Contract shall be construed to have been amended to provide for such terms. Company must elect a course within ninety (90) days of being informed by the City that such more favorable rates are being granted to another user or within ninety (90) days of actual notice by the Company of such favorable rates, whichever shall first occur. Failure by Company to elect such more favorable rates within the time specified shall constitute a waiver by Company of its right to amend this Contract to contain the more favorable rates.

11. Discharge Characteristics and Contaminants. The Company agrees that it will not substantially alter the characteristics or chemical content of the waste it is discharging into the City's sewage system from those being discharged from the date hereof which would result in damage to the City sewer system or create a health hazard to persons or property. City agrees to give Company ninety (90) days

advance notice before changing its ordinance of restricted or prohibited substances except in an emergency.

12. Future Sewer Plant Enlargements. The City shall have the right to expand or upgrade the Treatment Plant at any time in the future.

13. Termination. This Contract will remain in effect until September 30, 2003.

14. Non-Interference With Company Wastewater Treatment. The City will not accept wastewater from other customers or users for processing in the Treatment Plant so long as this Contract is operative that have characteristics that will entail additional treatment cost to the Company, or that will interfere with the proper treatment of the Company's waste or the proper and efficient operation of the Treatment Plant.

15. No Obligation To Discharge. Anything in this Contract to the contrary notwithstanding, the Company shall not be obligated to discharge into the City's sewer system any waste whatsoever.

16. Records. The City shall keep and preserve complete and accurate records and accounts of its costs of operating

the Treatment Plant, such records to be available for examination and copying by the Company during all usual business hours at any time and to be sufficiently detailed to enable the Company to ascertain operating costs.

17. Efficient Operation. The City will use its best efforts to operate its Treatment Plant and Sanitary Sewer Facilities efficiently in order that the effluent discharged therefrom into the Kalamazoo River will comply with the requirements of the Michigan Water Resources Commission and other governmental authorities that may now or hereafter have jurisdiction over said river.

18. Contract. This Contract sets forth the entire understanding and agreement between the parties respecting the subject matter hereof and is intended by the parties to replace the contracts on this subject between City and Company entered into in 1959 and 1967, provided however, any rights Company may have in an assignment between St. Regis/Champion, City and Company dated March 30, 1984 are preserved.

19. Assignment. The rights and obligations of the parties hereunder shall inure to and be binding upon their

respective successors and assigns and may be freely assigned by either party without consent of the other party. However, Company agrees that in the event Company assigns its rights and obligations under this Contract and said assignee fails to pay the remaining capital charges set forth in Exhibit A, in such cases only, Company shall remain secondarily liable to City for such capital charges and City, upon exhausting reasonable best efforts fails to obtain said charges from assignee, shall be able to require Company to pay such capital charges. City shall cooperate with Company to recover such capital charges from said assignee.

20. Sewer Fund. Monies paid to the City by the Company or other persons, firms or corporations, public or private, for the treatment of sewage, wastewater or other waste treated by the City's sewage Treatment Plant shall be used by the City exclusively for sewer purposes in accordance with generally accepted accounting principles.

21. Replacement Fund. City agrees to provide and fund a wastewater replacement fund from wastewater revenues in the amount of One Hundred Forty-Five Thousand ($145,000.00) Dollars annually.

22. Force Majeure. Either party shall be excused from liability for failure to perform its obligations hereunder when such failure is due to an act of God or the elements, fire, war, the public enemy, strikes, labor difficulties, civil commotion, transportation or other embargoes, act of civil or military authority, governmental priority, allocation, or order, except that the City shall not be excused for failure to perform its obligations if such failure is due to an act by the City.

IN WITNESS WHEREOF, the parties have caused this Contract to be executed by their respective duly authorized officers the 11th day of April, 1986.

WITNESS:

CITY OF BATTLE CREEK

BY

WITNESS:

MICHIGAN HOLDING CORPORATION

BY

EXHIBIT "A"

CAPITAL COSTS

1980 Construction	Total	Flow	B.O.D.	S.S.
Cost	$13,650,000			
Interest	16,603,506			
Total	$30,253,506			
Upgrading 43%	13,009,008			
Distribution	100%	16.94%	45.82%	37.24%
Annual Amortization (Sept., 2003)	$ 650,450	$110,186	$298,036	$242,228
Design Capacity		27 mgd	64.08M#/d	61.81M#/d
Per Unit Per Year		$ 4,080.96/mg	$ 4,651.00/Mlb	$ 3,918.91/Mlb
Per Unit Per Day		11.18/mg	$ 12.42/Mlb	$ 10.94/Mlb

	Total	Kelloggs	General Foods	Waldorf	Michigan Holding
Contract Capacities					
Flow	6.95mgd	1.4mgd	.55mgd	2.5mgd	2.5mg
B.O.D.	35,550#/d	21,000#/d	8,050#/d	3,250#/d	3,250#/d
S.S.	16,500#/d	4,000#/d	2,500#/d	5,000#/d	5,000#/d
Annual Contract Capital Charge for 1980 Construction					
Flow	$ 28,362	$ 5,713	$ 2,244	$10,203	$10,202
B.O.D.	163,345	97,671	37,442	15,116	15,116
S.S.	64,662	15,676	9,797	19,594	19,595
(A) Total	$258,369	$119,060	$49,483	$44,913	$44,913
Annual Contract Capital Charge Per 1967 Contract					
1960 Construction (Nov., 1992)	$ 97,096	$ 25,033	$17,315	$27,374	$27,374
(B) 1966 Construction (Oct., 1997)	50,753	40,702	7,523	1,264	1,264
Sub Total	$147,849	$ 65,735	$24,838	$28,638	$28,638
(B) 1971 Capacity Increase (Oct., 1997)	4,513		4,513		
(C) Total)	$153,362	$ 65,735	$29,351	$28,638	$28,638
Total Contract Capital Charge					
Annual Charge:					
Oct. 1983-Nov. 1992 (A + C)	$410,731	$184,795	$78,834	$73,551	$73,551
Dec. 1992-Oct. 1997 (A + B)	$313,635	$159,762	$61,519	$46,177	$46,177
Nov. 1997-Sept. 2003 (A)	$258,369	$119,060	$49,483	$44,913	$44,913

EXHIBIT "B"

PENALTY CHARGES FOR EXCEEDING PURCHASED CAPACITY ON A MONTHLY AVERAGE

	Total	Flow	B.O.D.	S.S.
1960 Construction				
Cost	$3,351,911			
Interest	2,136,360			
Hydroscience (64-65)	18,361			
Interest	5,851			
Total	$5,512,483			
Distribution	100%	24.8%	43.5%	31.7%
Annual Amortization (Nov., 1992)	$ 183,749	$ 45,570.00	$ 79,931.00	$ 58,248.00
Design Capacity Factor		22 mg/d	66 M#/d	66.595M#/d
Per Unit Per Day		$ 5.67/mg	$ 3.32/M#	$ 2.39/M#
1966 Construction				
Cost	$3,046,000			
Interest	2,206,000			
Total	$5,252,000			
Distribution	100%	19.0%	47.0%	34.0%
Annual Amortization (Oct., 1997)	$ 175,067	$ 33,263.00	$ 82,281.00	$ 59,523.00
Design Capacity		22 mg/d	66 M#/d	66.595M#/d
Per Unit Per Day		$ 4.14	$ 3.41	$ 2.45
Sub Total 1960 and 1966 Construction				
Per Unit Per Day		$ 9.81/mg	$ 6.73/M#	$ 4.84/M#
1980 Construction				
Cost	$13,650,000			
Interest	16,603,506			
Total	$30,253,506			
Distribution	100%	16.94%	45.82%	37.24%
Annual Amortization (Sept., 2003)	$ 1,512,675	$256,247.00	$693,108	$563,320.00
Design Capacity		27 mg/d	64.080 M#/d	61.81M#/d
Per Unit Per Day		$ 26.00	$ 29.63	$ 24.77
Grand Total - All Construction				
Per Unit Per Day		$ 35.81/mg	$ 36.36/M#	$ 29.81/M#

This penalty is not reduced at 1992, 1997 or 2003 bench marks when Exhibit A capital charges reflect bond issue payoffs and shall remain in effect until termination of this Contra

MONTHLY PENALTY COMPUTATION

	Flow	B.O.D.	S.S.	Total
Actual Loadings (Daily Average)	mg	M#	M#	
Less: Purchased Capacity (Paragraph 1)	mg	M#	M#	
Excess Loadings	mg	M#	M#	
Total Daily Penalty Rate	X$35.81	X$36.36	X$29.81	
Days in Month	X	X	X	
Total Monthly Contract Penalty Charge	$	$	$	$

EXHIBIT "C"

CAPITAL COSTS FOR INCREASED CAPACITY
PER CAPACITY UNIT FOR FLOW, B.O.D., AND S.S.

For Fiscal Year Ending June 30:	Flow (mgd)	B.O.D. (M#/d)	S.S. (M#/d)
1984	$35.81	$36.36	$29.81
1985	34.91	35.45	29.06
1986	34.02	34.54	28.32
1987	33.12	33.63	27.57
1988	32.23	32.72	26.83
1989	31.33	31.82	26.08
1990	30.44	30.91	25.34
1991	29.54	30.00	24.59
1992	28.65	29.09	23.85
1993	27.75	28.18	23.10
1994	26.86	27.27	22.36
1995	25.96	26.36	21.61
1996	25.07	25.45	20.86
1997	24.17	24.54	20.12
1998	23.28	23.63	19.37
1999	22.38	22.73	18.63
2000	21.49	21.82	17.88
2001	20.59	20.91	17.14
2002	19.70	20.00	16.39
2003	18.80	19.09	15.65

Assumes 20 year useful life and salvage value of 50%.

CITY OF BATTLE CREEK, MICHIGAN

PUBLIC WORKS DEPARTMENT
Wastewater Division

AUTHORIZATION NO. 159

INDUSTRIAL USE. #7 **ZATION**

In accordance with the provisions of the City of Battle Creek, Michigan, Chapter 1040 Water and Sewe

Michigan Carton and Paperboard Con
79 E. Fountain Street
Battle Creek, MI 49017-4198

is hereby authorized to discharge industrial wastewater from the above identified facility into the City of Battle Creek Sewer System in accordance with the effluent limitations, monitoring requirements, and any other conditions set forth in this Discharge Authorization.

All discharges authorized herein shall be consistent with the terms and conditions of this Discharge Authorization. The discharge of any pollutant identified in this Discharge Authorization more frequently than or at a level in excess of that authorized shall constitute a violation.

This Authorization shall become effective on July 1, 2002, and shall expire at midnight on June 30, 2005.

If the User wishes to continue to discharge after this expiration date, an application must be filed for reissuance of this Authorization, a minimum of 90 days prior to the expiration date. At that time, a review will be performed to determine if any changes are necessary in the requirements of this Authorization.

By: Lawrence DeBry
Control Authority Signature

Issued on July 1, 2002

2000 West River Road, Battle Creek, Michigan 49015-1181
Phone (616) 966-3597
Fax (616)965-3290

PART I - SELF-MONITORING REQUIREMENTS (The user is required to comply with all the following conditions.)

A. DISCHARGE TESTING (1040.58)

(a) The Director of Public Works may require a user to test, at the user's expense and on a regular basis, the quantity, composition and concentration of its discharge, to sample and analyze the same in accordance with the latest edition of **Standard Methods for the Examination of Water and Wastewater** and to report the test results to the Director. If a user which has been so required by the Director fails to test and report to the satisfaction of the Director, then the Director may determine the quantity, composition and concentration of such discharge either by estimates on the basis of data available to the Director or by samplings, measurements and analyses performed by the Director at the expense of the user.

(b) Any person who violates any provision of this Section shall be subject to the penalty provided at Section 1040.89(a).

B. SELF-MONITORING/REPORTING SCHEDULE

Attachment A outlines the self-monitoring and reporting requirements that have been established for your facility. These parameters were developed through Federal, State and City guidelines for your type of facility.

C. SAMPLING MANHOLE

Attached is copy of either a drawing or aerial photo for your facility. The location of the manhole that should be utilized for all wastewater discharge monitoring has been highlighted. This manhole should be used to collect all wastewater effluent samples from your location. This manhole will also be utilized by the City of Battle Creek

D. SAMPLE TYPES

All sampling will be conducted according to the requirements for that specific parameter. Unless other- wise specified, all samples will be time composited samples representing a twenty-four (24) hour period or one working day (i.e. 8 hours) which ever is applicable. Samples shall be taken while your facility is in production.

B. <u>INFORMATIONAL REPORTS</u> (1040.54)

(a) All current and proposed industrial users shall be required by the Director to file informational reports for the benefit of Local, State, and Federal governmental units. The user shall comply with the Director's request for data by submitting, as may be necessary, in units and terms appropriate for evaluation;

(1) The name, address and SIC number of the industrial user;

(2) The volume of wastewater to be discharged;

(3) The wastewater constituents and characteristics, including, but not limited to, those mentioned in Section 1040.49, as determined by a laboratory approved by the Director;

(4) The time and duration of discharge;

(5) The average and fifteen-minute peak instant wastewater flow rates, including daily, monthly and seasonal variations, if any;

(6) Site plans, floor plans, mechanical and plumbing plans and details to show all transfers and appurtenances by size, location and elevation;

(7) A description of activities, facilities and plant processes on the premises, including all materials, processes and types of material which are or could be discharged;

(8) Each product produced, by type, amount and rate of production;

(9) The number and type of employees and hours of work;

(10) A hazardous materials survey;

(11) Informational reports from categorical industries within 180 days after the effective date of the categorical pretreatment standards, which reports shall include a statement as to whether pretreatment standards are being met on a consistent basis and, if not, whether additional operations and maintenance and/or additional pretreatment is required to meet the pretreatment standards and requirements;

(12) Any other information relative to wastewater conveyance, characteristics, quantities or pretreatment, as may be determined by the Director to be necessary to evaluate the data furnished by the user, including reports of monitoring of any pollutants more frequently than required by POTW;

(16) The Signature of an authorized representative of the user certified by a qualified professional indicating whether pretreatment standards are being met on a consistent basis and, if not, whether additional operation and maintenance and additional pretreatment is required and the Certification Statement required by 40 CFR Section 403.6(a) (2) (ii).

(17) Evidence of the following by user subject to a national categorical pretreatment standard shall:

(A) A baseline monitoring report submitted to the Director ninety days prior to first discharge, a ninety-day report and semiannual reports that meet Federal pretreatment requirements at 40 CFR, Section 403.12 or any revision thereto indicating the nature and concentration of pollutants in the discharge.

(B) Use of a minimum of four (4) grab samples for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. For all other pollutants, twenty-four-hour composite samples must be obtained through flow-proportional composite sampling techniques where feasible. The Control Authority may waive flow-proportional composite sampling for any industrial user that demonstrates that flow-proportional composite sampling is infeasible. In such cases samples may be obtained through time-proportional composite sampling techniques or through a minimum of four grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged.

(C) A minimum of one representative sample taken to compile that data necessary to comply with the requirements of this paragraph.

(18) Semiannual reports to the Director from any significant industrial user or other User required to have a permit, indicating the nature and concentration of pollutants in the discharge. The specific standards or the POTW itself may require this report to be filed more frequently. In addition, this report shall include a report of all daily flows which, during the reporting period, exceeded the average daily flow in the permit.

(19) Notification to the City in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the industrial user has submitted initial notification under subsection (t) hereof.

(20) Hazardous waste notification, as follows:

A. Any industrial user, except as specified in paragraph (a)(20)E. hereof, which discharges to the public sewer any substance which, if otherwise disposed of,

C. Effluent limits based on applicable general pretreatment standards, categorical pretreatment standards, local limits and State and Local law;

D. Self-monitoring, sampling, reporting, notification and record keeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency and same type, based on the applicable general pretreatment standards, categorical pretreatment standards, local limits and State and local law;

E. A statement of applicable civil and criminal penalties for a violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond applicable Federal deadlines.

C. ACCIDENTAL DISCHARGES

1. NOTICES AND INSTRUCTIONS FOR ACCIDENTAL DISCHARGE (1040.61)

(a) A notice prepared by the user shall be prominently and permanently posted at appropriate locations at each commercial and industrial user facility advising its employees of whom to call in case of an accidental discharge in violation of any provision of this chapter. In addition, instruction shall be given to appropriate employees of the user and the same certified to the City on an annual basis.

(c) A person who violates any of the provisions of this section shall be subject to the penalty provided in Section 1040.89(a)

2. ACCIDENTAL DISCHARGES: REPORTS AND STATEMENTS (1040.62)

(a) Any accidental discharge of a slug, or a prohibited substance, or any substance which could cause a problem, directly or indirectly into a public sewer shall be immediately reported to the wastewater treatment plant or the Director of Public Works by the person responsible for such discharge or by the owner or occupant of the property from which the discharge was made, to enable counter-measures to be taken by the City to minimize damage to the City sewers, treatment facilities, treatment processes and receiving waters.

(b) Such notification shall be followed, within seven days of the date of occurrence, by a detailed written statement describing the causes of the accidental discharge and the measures being taken to prevent further occurrence. Such notification shall not relieve users of liability for any expense, loss or damage to the sewerage system, treatment plant or treatment process or for any fines imposed on the City on account thereof by any regulatory agency.

D. MONITORING BUILDING SEWERS AND DRAINS (1040.59)

(a) The Director of Public Works may require the user to construct, at his own expense, monitoring facilities, including a control manhole, if necessary, to allow observation, inspection, sampling and measurement of the quantity, composition and concentration of waste to the building sewer or internal drainage systems and may also require sampling or metering equipment to be provided, installed and operated at the user's expense. The monitoring facility shall be situated on the user's premises, with accommodations to allow access by City representatives. There shall be ample room in or near the sampling point to allow accurate sampling and composting for analysis. All equipment and appurtenances thereto shall be maintained at all times in a safe and proper operating condition at the expense of the user. If self-monitoring reveals violation of any discharge limitations specified herein, the industrial user shall notify the City within 24 hours of becoming aware of the violation. The industrial user shall also repeat the sampling and analysis and submit the results of the repeat analysis to the City within 30 days after becoming aware of the violation.

E. DISPOSAL OF PRETREATMENT SLUDGES AND SPENT CHEMICALS

The disposal of sludges and spent chemicals generated shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

F. SUBMISSION OF REPORTS

All reports shall be submitted to the following address:

Industrial Surveillance
City of Battle Creek
2000 West River Road
Battle Creek, MI 49015-1181

G. TERMINATION OF SERVICE (1040.69)

In addition to statutes, rules or regulations authorizing termination of service for delinquency in payment, the City may terminate or cause to be terminated wastewater service to users for:

(a) Submitting to the Director of Public Works, the City or a State or Federal government unit false statements, representations, records, reports, plans or other documents;

(b) Tampering with or rendering inaccurate any monitoring device, public or private meter or equipment installed or operated pursuant to this chapter;

K. DISCHARGE AUTHORIZATION MODIFICATION

This authorization may be modified for good causes including, but not limited to, the following:

1. To incorporate any new or revised Federal, State, or local pretreatment standards or requirements;

2. Material or substantial alterations or additions to the user's operation processes, or discharge volume or character which were not considered in drafting the effective authorization;

3. A change in any condition in either the industrial user or the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge;

4. Information indicating that the permitted discharge poses a threat to the Control Authority's collection and treatment systems, POTW personnel or the receiving waters;

5. Violation of any terms or conditions of the authorization;

6. Misrepresentation or failure to disclose fully all-relevant facts in the authorization application or in any required reporting;

7. Revision of or a grant of variance from such categorical standards pursuant to 40 CFR 403.13;

8. To correct typographical or other errors in the authorization;

9. Upon request of the user, provided such request does not create a violation of any applicable requirements, standards, laws, or rules and regulations;

L. TRANSFERABILITY OF DISCHARGE AUTHORIZATION

This Discharge Authorization is not transferable. A new owner or operator must apply at least thirty days in advance, for a new authorization to be issued. This authorization is considered site and owner or operator specific.

M. PENALTY (1040.89)

(a) Civil Penalty Whoever intentionally or negligently violates any provision of this chapter or any provision of any permit issued pursuant to this chapter, or intentionally or negligently discharges waste or wastewater which causes pollution, or intentionally or negligently violates any cease and desist order, prohibition, effluent limitation, national

SELF-MONITORING AND REPORTING REQUIREMENTS

Industrial User #: **159**
Company Name: **Michigan Paperboard Corporation**
Point Source Category:* **Pulp, Paper, Paperboard** **40 CFR Part 430-431, Subcategory Groundwood - Thermochemical**

Parameter	One Day Maximum	Monthly Maximum	Units	Sampling Frequency	Reporting Frequency
Flow	----	----	gals		
BOD-5 Day	20,000	10,000	lbs		
Suspended Solids	20,000	10,000	lbs		
pH	9.5 - 6.0	9.5 - 6.0	S.U.		
2-chlorophenol[1]	4.2	4.2	mg/l	Semi-Annual	Semi-Annual
2-4-dichlorphenol[1]	7.1	7.1	mg/l	Semi-Annual	Semi-Annual
2-4-6-trichlorphenol[1]	0.7	0.7	mg/l	Semi-Annual	Semi-Annual
Pentachlorophenol[1]	0.1	0.1	mg/l	Semi-Annual	Semi-Annual

Attachment A

[1] Established by Federal Pretreatment Standards and may be waived upon certification that these parameters do not exist in your process or products.

The City of Battle Creek performs daily sampling for suspended solids, BOD 5-Day, and flow.

* If applicable, refer to Part III, Section B, (13)

Updated:6/4/2002

ATTACHMENT B

SPECIAL DISCHARGE AUTHORIZATION NO. 159 -S
(COMPATIBLE - CONTRACT)

In accordance with the Codified Ordinances of the City of Battle Creek, Michigan, Chapter 1040, Water and Sewers, Section 1040.49.

COMPANY NAME: **Michigan Paperboard Corporation**

FACILITY ADDRESS: **79 E. Fountain Street**

Battle Creek, MI 49017-4198

is hereby authorized to discharge wastewater from the above identified facility into the City of Battle Creek Sewer System in accordance with the following effluent limitations.

PARAMETER	ONE DAY MAXIMUM (LBS)	MAXIMUM MONTHLY AVERAGE (LBS)
Suspended Solids	20,000	10,000
BOD 5-Day	20,000	10,000

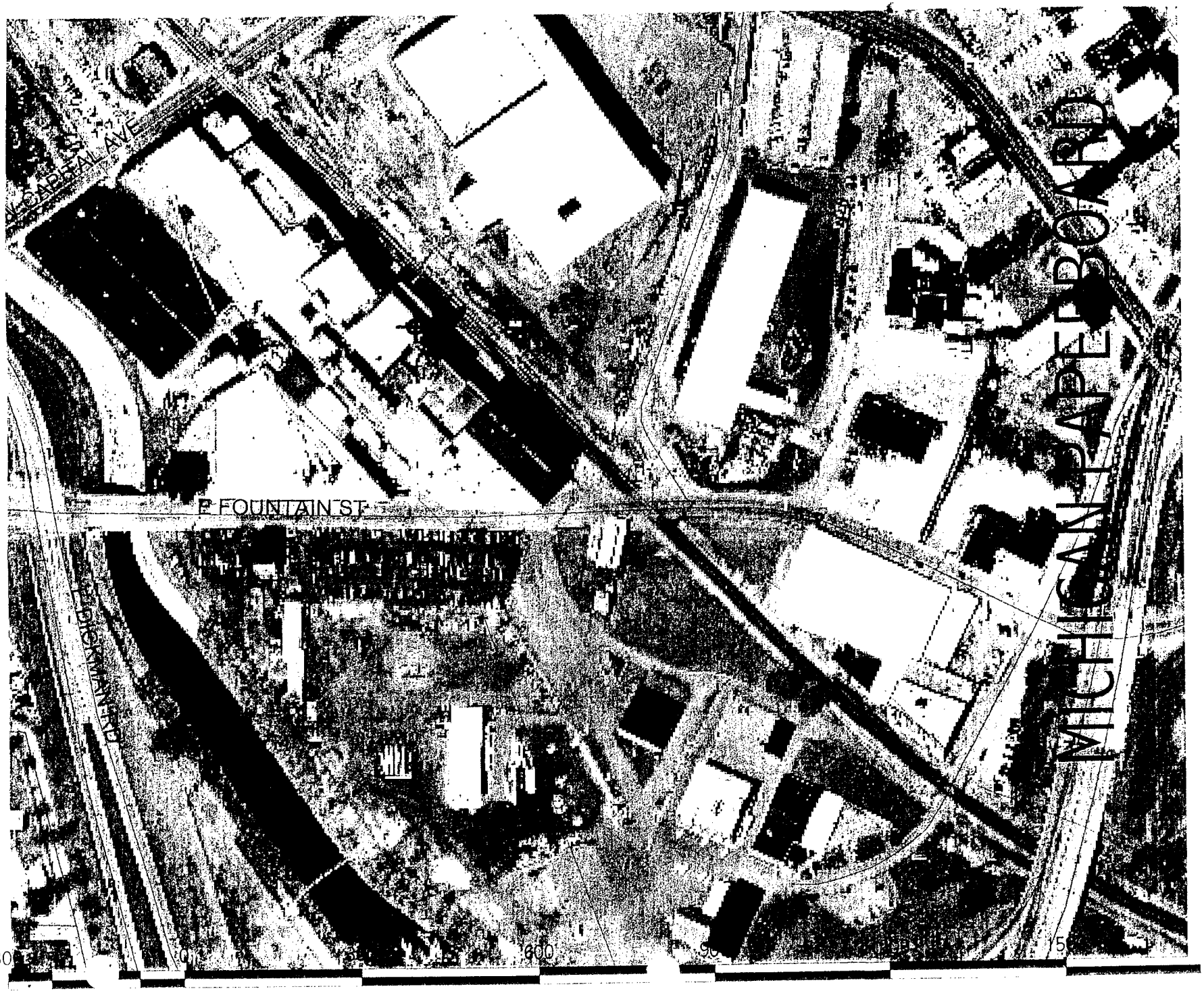
The discharge of wastewater exceeding the limitations established in the Codified Ordinances of the City of Battle Creek (Chapter 1040, Water and Sewers) will constitute extra-strength waste, and the Company will be billed according to charges as established by Resolution of the City Commission. The City of Battle Creek will conduct periodic monitoring of the Company's effluent to determine the quantity of extra-strength waste being discharged by the Company. If, at any point, the City of Battle Creek determines this extra-strength discharge is detrimental to human life, the collection system, or the wastewater treatment plant processes this Special Discharge Authorization will be immediately suspended.

In addition, the discharge shall comply with al other applicable regulations or standards as established in the Codified Ordinances of the City of Battle Creek. If found in violation of any of these regulations, the Company shall be subject to enforcement action as defined by Federal, State, or City law.

This Authorization shall become effective on July 1, 2002 and shall expire at midnight on June 30, 2005.

By: Laurence DeBerg
Control Authority Signature

Issued on July 1, 2002



MICHIGAN PAPER BOARD
W CAPITAL AVE
E FOUNTAIN ST
E DICKMAN RD
300
600
1800 Feet

SELF-MONITORING REQUIREMENTS

Enclosed are the self-monitoring results input forms for your facility. The self-monitoring program is continuous and must be adhered to by all industries. The following rules apply to all self-monitoring reports that must be submitted

1) Semi-Annual reports are due on or before January 15th and July 15th for the preceding months. Quarterly reports are due on or before January 15th, April 15th, July 15th, and October 15th.
2) A complete report submittal will include:
   (a) A signed certification statement.
   (b) A completed self-monitoring sampling results input form.
   (c) All copies of the analysis from the contract lab that were sent to your facility.
3) Those industries that do not submit the required self-monitoring reports in accordance with the specified deadlines will be assessed as a minimum, fines and penalties amounting to $500 dollars per delinquent report. Continued violations may cause additional penalties up to and including termination of service. The delinquent report will still be required.
4) If violations are noted the industrial user is required to notify the City within 24 hours of becoming aware of the violation. The industrial user shall repeat the sampling and analysis and submit the results of both the original and repeat analyses to the City within 30 days after becoming aware of the violation.

Enclosed are three copies of a certification statement and self-monitoring sampling results input forms. It is the user's responsibility to obtain additional copies of these documents for later use.

Request

7

KATTEN MUCHIN & ZAVIS

IRVINE, CA
LOS ANGELES, CA
MADISON, WI
MIAMI, FL
NEW YORK, NY
WASHINGTON, D.C.

525 WEST MONROE STREET • SUITE 1600

CHICAGO, ILLINOIS 60661-3693

TELEPHONE
(312) 902-5200
TELECOPIER
(312) 902-1061
TELEX
298264 ATLAW UR

WRITER'S DIRECT DIAL NUMBER

(312) 902-5584

April 9, 1992

VIA CERTIFIED MAIL/RETURN RECEIPT REQUESTED

Mr. Ronald B. Willson
Act 307 Section
Environmental Response Division
Department of Natural Resources
Stevens T. Mason Building
P.O. Box 30028
Lansing, Michigan 48909

RE: Michigan Paperboard Corporation, Calhoun County

Dear Mr. Willson:

By this letter, Michigan Paperboard Corporation formally petitions the Michigan Department of Natural Resources, pursuant to Administrative Rule 299.5215, promulgated under Michigan Act 307 of the Public Acts of 1982, to remove its site, located at 79 East Fountain Street, Battle Creek, Michigan, from the Michigan Act 307 list. The following information is provided in accordance with Rule 299.5215.

At the request of the Michigan Department of Public Health, Michigan Paperboard retained EDI Engineering & Science in August 1988 to perform an environmental evaluation of an abandoned stream bed underlying the plant, which is primarily surrounded by commercial and industrial facilities. The Kalamazoo River, which once flowed beneath the plant, was diverted leaving an abandoned stream bed eight to nine feet beneath the first floor of the plant. The maintenance-area floor drain, at one time, discharged directly into the abandoned stream bed below. The floor drain has since been plugged and all discharge has been diverted.

In order to comply with Michigan Act 245, EDI determined groundwater quality by installing three monitoring wells. Two composite soil samples were also collected from the upper six inches in the area affected by the discharge. Analytical results indicated that the soils contained low levels of aromatic hydrocarbons. The quality of groundwater, the local hydraulic gradient and the direction of flow in the uppermost aquifer underlying the plant were investigated in October 1988. Three groundwater samples were collected and analyzed for MDNR scans 1

and 2, naptha and ethylene glycol. The soils were also scanned with a photoionization detector as the wells were drilled. As a result, two soil samples were collected from split spoon core barrels and analyzed for the same parameters as the groundwater samples.

No detectable contamination of the groundwater or soil was reported by the laboratory in these samples. EDI concluded that there was no indication of groundwater degradation and, therefore, no violation of Michigan Act 245. EDI did, however, recommend that the soils displaying contamination beneath the floor drain be excavated, removed and disposed of as Type II solid industrial waste.

By letter dated November 22, 1989, Michigan Paperboard was notified by the Michigan DNR that its Battle Creek facility had been identified as a site of environmental contamination under the Michigan Environmental Response Act, Public Act 307 and that it would be listed on the Act 307 "Proposed Priority List of Michigan Sites of Environmental Contamination". The State, in its listing report, attributed a score of (7) to the site.

By letter dated January 3, 1990, Anthony Giglio, formerly of my office, submitted EDI's sample results and argued that the score of (7) was incorrect. In a February 5, 1990 letter, you indicated that the DNR had rescreened the Michigan Paperboard site from (7) to (6) to reflect the absence of data confirming groundwater impact. However, you also reported that Michigan Paperboard would be included in the fiscal year 1991 final priority list based on data reportedly indicating soil contamination at the site.

In February 1990, Michigan Paperboard submitted a cleanup plan to your agency. Subsequent to Michigan Paperboard's work plan, however, the Act 307 Administrative Rules were passed. In response to those rules, our consultant, WW Engineering & Science, formerly EDI, alerted Michigan Paperboard that its previous recommendations should be reevaluated in light of the new cleanup criteria. The Administrative Rules indicate that remediation is not necessary if concentrations of contaminants presently in the soil fall below the Type B criteria specified in the Administrative Rules.

In accordance with the Administrative Rules, Michigan Paperboard retained WW Engineering to perform further testing in the abandoned stream bed to determine current levels of contamination. Their investigation determined that the ethyl

benzene and xylene, for which the facility was listed, were found to be below Type B cleanup criteria. I have enclosed a copy of WW Engineering's report and analytical data for your review.

Because previous recommendations concerning remediation of this area no longer appear to be applicable given the recently promulgated Michigan 307 Administrative Rules, Michigan Paperboard petitions your agency to remove the above-referenced facility from the Michigan Act 307 list and to require no further action.

I appreciate your consideration in this matter and look forward to your response. In the meantime, please do not hesitate to call me with any questions or comments you may have.

Very truly yours,

Anne Chatham Ryan

Anne Chatham Ryan

ACR/pjd:416982

cc: Jack Crabtree
John Raevouri
Craig VandenBerge

WW Engineering & Science, Inc.
5555 Glenwood Hills Parkway SE • PO Box 874 • Grand Rapids, MI 49588-0874 • (616) 942-9600, Fax (616) 942-6499

April 6, 1992

Mr. Jack H. Crabtree
Michigan Paperboard Company
79 East Fountain Street
Battle Creek, MI 49017-4198

RE: ANALYTICAL RESULTS OF SOIL SAMPLES FROM THE ABANDONED STREAM BED

Dear Mr. Crabtree:

WW Engineering & Science (WWES) is pleased to submit this letter report summarizing the results of the laboratory analyses of soil samples collected from the abandoned stream bed beneath the Michigan Paperboard facility. The sampling and analyses were performed to determine if previous recommendations concerning remediation of this area continue to be applicable within the context of the recently promulgated Michigan Act 307 Administrative Rules.

SOIL SAMPLING

Soil samples were collected from the stream bed, in the area of a former floor drain, by a WWES representative on May 13, 1991. The samples were collected from depths of 3 to 6 inches, 6 to 12 inches and 12 to 24 inches below the surface. Each sample was then placed in an ice filled cooler and transported to the WWES lab for analyses.

LABORATORY ANALYSES

Results of the laboratory analyses are summarized in Table 1. Analytical data sheets are presented in Attachment A. Each sample was analyzed for VOC's using gas chromatography/mass spectrometry (GC/MS). As indicated in Table 1 samples from the 3- to 6-inch and 6- to 12-inch depths contained detectable concentrations of toluene and xylenes. Toluene was present in both shallow and intermediate depth samples at a concentration of 15 ug/Kg (15 ppb), while xylene was present only in the 3- to 6-inch sample at a concentration of 85 ppb. Concentrations of both toluene and xylene are below the Type B cleanup criteria of 16,000 ppb and 600 ppb, respectively. Ethylbenzene was not detected at a method detection limit of 20 ppb, a value well below its Type B cleanup criteria of 1,400 ppb. The increased detection limits for some of the compounds are due to sample dilution.

CONCLUSIONS AND RECOMMENDATIONS

Laboratory analyses indicate that only toluene and xylene are present in concentrations above the method detection limit in soil samples collected from the stream bed. Since both compounds are below Type B cleanup criteria remediation of this area is not recommended.

WWES appreciates the opportunity to serve Michigan Paperboard on this project. We encourage you to contact us if you have any questions or comments about this report.

Sincerely,

WW ENGINEERING & SCIENCE
ENVIRONMENTAL SERVICES DIVISION

Stan Leja

Stan Leja
Geologist

Craig VandenBerge

Craig VandenBerge
Project Manager

ATTACHMENT A

LABORATORY ANALYSES DATA SHEETS

TABLE 1
Summary of Soil Analyses
Michigan Paperboard Corporation
Battle Creek, Michigan
Concentrations in micrograms/kilogram (ug/kg)

Location:	SS# 1	SS# 2	SS# 3
Depth:	3"-6"	6"-12"	12"-24"
Compound:			
Benzene	ND	ND	ND
Bromodichloromethane	ND	ND	ND
Bromoform	ND	ND	ND
Bromomethane	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND
Chlorobenzene	ND	ND	ND
Chlorodibromomethane	ND	ND	ND
Chloroethane	ND	ND	ND
Chloroform	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND
cis-1,2-Dichloroethylene	ND	ND	ND
trans-1,2-Dichloroethylene	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND
cis-1,3-Dichloropropylene	ND	ND	ND
trans-1,3-Dichloropropylene	ND	ND	ND
Ethylbenzene	ND	ND	ND *
Methylene Chloride	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND *	ND	ND
Tetrachloroethylene	ND *	ND	ND
Toluene	15	15	ND
1,1,1-Trichloroethane	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND
Trichloroethylene	ND	ND	ND
Trichlorofluormethane	ND	ND	ND
Vinyl Chloride	ND	ND	ND
Xylene	85	ND	ND

ND = Compound not present above method detection limit.
Highlighted = Compound present above method detection limit.
** = Higher detection limits for volatiles due to sample dilution.*

ATTACHMENT A

LABORATORY ANALYSES DATA SHEETS

WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#1 3"-6"

DATE SAMPLED: 05/13/91 TIME: 11:40 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/19/91

SAMPLE NO. 64944

COMPOUND	RESULT (ug/kg)	D.L.	COMPOUND	RESULT (ug/kg)	D.L.
BENZENE	*	10	TRANS-1,2-DICHLOROETHYLENE	*	10
BROMODICHLOROMETHANE	*	10	1,2-DICHLOROPROPANE	*	10
BROMOFORM	*	10	CIS-1,3-DICHLOROPROPYLENE	*	10
BROMOMETHANE	*	10	TRANS-1,3-DICHLOROPROPYLENE	*	10
CARBON TETRACHLORIDE	*	10	ETHYL BENZENE	*	10
CHLOROBENZENE	*	10	METHYLENE CHLORIDE	*	10
CHLORODIBROMOMETHANE	*	10	1,1,2,2-TETRACHLOROETHANE	*	20**
CHLOROETHANE	*	10	TETRACHLOROETHYLENE	*	20**
2-CHLOROETHYLVINYL ETHER	---	---	TOLUENE	15	10
CHLOROFORM	*	10	1,1,1-TRICHLOROETHANE	*	10
CHLOROMETHANE	---	---	1,1,2-TRICHLOROETHANE	*	10
1,1-DICHLOROETHANE	*	10	TRICHLOROETHYLENE	*	10
1,2-DICHLOROETHANE	*	10	TRICHLOROFLUOROMETHANE	*	10
1,1-DICHLOROETHYLENE	*	10	VINYL CHLORIDE	*	10

*COMPOUND NOT PRESENT AT DETECTION LIMIT
**RAISED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

disk

WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#1 3"-6"

DATE SAMPLED: 05/13/91 TIME: 11:40 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/19/91

SAMPLE NO. 64944

COMPOUND	RESULT (ug/kg)	D.L.
XYLENE	85	10
CIS-1,2 DICHLORO-ETHYLENE	<10	10

disk

WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#2 6"-12"

DATE SAMPLED: 05/13/91 TIME: 11:45 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/19/91

SAMPLE NO. 64945

COMPOUND	RESULT (ug/kg)	D.L.	COMPOUND	RESULT (ug/kg)	D.L.
BENZENE	*	10	TRANS-1,2-DICHLOROETHYLENE	*	10
BROMODICHLOROMETHANE	*	10	1,2-DICHLOROPROPANE	*	10
BROMOFORM	*	10	CIS-1,3-DICHLOROPROPYLENE	*	10
BROMOMETHANE	*	10	TRANS-1,3-DICHLOROPROPYLENE	*	10
CARBON TETRACHLORIDE	*	10	ETHYL BENZENE	*	10
CHLOROBENZENE	*	10	METHYLENE CHLORIDE	*	10
CHLORODIBROMOMETHANE	*	10	1,1,2,2-TETRACHLOROETHANE	*	10
CHLOROETHANE	*	10	TETRACHLOROETHYLENE	*	10
2-CHLOROETHYLVINYL ETHER	---	---	TOLUENE	15	10
CHLOROFORM	*	10	1,1,1-TRICHLOROETHANE	*	10
CHLOROMETHANE	---	---	1,1,2-TRICHLOROETHANE	*	10
1,1-DICHLOROETHANE	*	10	TRICHLOROETHYLENE	*	10
1,2-DICHLOROETHANE	*	10	TRICHLOROFLUOROMETHANE	*	10
1,1-DICHLOROETHYLENE	*	10	VINYL CHLORIDE	*	10

*COMPOUND NOT PRESENT AT DETECTION LIMIT

disk

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WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#2 6"-12"

DATE SAMPLED: 05/13/91 TIME: 11:45 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/19/91

SAMPLE NO. 64945

COMPOUND	RESULT (ug/kg)	D.L.
XYLENE	<10	10
CIS-1,2 DICHLORO-ETHYLENE	<10	10

disk

WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#3 12"-24"

DATE SAMPLED: 05/13/91 TIME: 11:50 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/23/91

SAMPLE NO. 64946

COMPOUND	RESULT (ug/kg)	D.L.	COMPOUND	RESULT (ug/kg)	D.L.
BENZENE	*	10	TRANS-1,2-DICHLOROETHYLENE	*	10
BROMODICHLOROMETHANE	*	10	1,2-DICHLOROPROPANE	*	10
BROMOFORM	*	10	CIS-1,3-DICHLOROPROPYLENE	*	10
BROMOMETHANE	*	10	TRANS-1,3-DICHLOROPROPYLENE	*	10
CARBON TETRACHLORIDE	*	10	ETHYL BENZENE	*	20**
CHLOROBENZENE	*	10	METHYLENE CHLORIDE	*	10
CHLORODIBROMOMETHANE	*	10	1,1,2,2-TETRACHLOROETHANE	*	10
CHLOROETHANE	*	10	TETRACHLOROETHYLENE	*	10
2-CHLOROETHYLVINYL ETHER	---	---	TOLUENE	*	10
CHLOROFORM	*	10	1,1,1-TRICHLOROETHANE	*	10
CHLOROMETHANE	---	---	1,1,2-TRICHLOROETHANE	*	10
1,1-DICHLOROETHANE	*	10	TRICHLOROETHYLENE	*	10
1,2-DICHLOROETHANE	*	10	TRICHLOROFLUOROMETHANE	*	10
1,1-DICHLOROETHYLENE	*	10	VINYL CHLORIDE	*	10

*COMPOUND NOT PRESENT AT DETECTION LIMIT
**RAISED DETECTION LIMIT DUE TO MATRIX INTERFERENCE.

disk

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WW ENGINEERING & SCIENCE
PRIORITY POLLUTANT ANALYSIS

TABLE 1
VOLATILE FRACTION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
SAMPLE: SS#3 12"-24"

DATE SAMPLED: 05/13/91 TIME: 11:50 AM
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 05/23/91

SAMPLE NO. 64946

COMPOUND	RESULT (ug/kg)	D.L.
XYLENE	<100	100**
CIS-1,2 DICHLORO-ETHYLENE	<10	10

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WW ENGINEERING & SCIENCE
ENVIRONMENTAL LABORATORY DIVISION

CLIENT: MICHIGAN PAPERBOARD
PROJECT NO.: 27676
LOCATION:
SAMPLED BY: ERIC MEYERS
DESCRIPTION: SOIL ANALYSIS

DATE SAMPLED: 05/13/91 TIME:
DATE RECEIVED: 05/13/91 TIME: 1:40 PM
DATE COMPLETED: 06/07/91
SCHEDULED COMPLETION: 06/03/91
ANALYST: KT,JB,SH
QUALITY CONTROL REVIEW BY: KVH,JRS
WORKSHEET NO: 1

	SS#1 3"-6"	SS#2 6"-12"	SS#3 12"-24"	DETECTION LIMIT	UNITS
LAB SAMPLE NO:	64944	64945	64946		
MDNR SCAN 1 & 2	ENCLOSED	ENCLOSED	ENCLOSED		
NAPHTHA	<500*	<500*	<500*	10	mg/kg
TIME SAMPLED:	11:40 AM	11:45 AM	11:50 AM		

*SAMPLE WAS DILUTED AND THE DETECTION LIMIT WAS ELEVATED DUE TO MATRIX INTERFERENCE.

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LABORATORY DETAIL REPORT

KAR Project No. : *010027*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/15/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/02/00"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/2/01*
Sample Time : *3:30pm*
Date Received : *1/2/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/02/01	AJC	

Sample ID : *"Outfall, 1/03/00"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *1/3/01*
Sample Time : *2:45pm*
Date Received : *1/3/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/03/01	AJC	

Sample ID : *"Outfall, 1/04/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/4/01*
Sample Time : *2:52pm*
Date Received : *1/4/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/04/01	AJC	

Sample ID : *"Outfall, 1/05/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/5/01*
Sample Time : *2:20pm*
Date Received : *1/5/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/05/01	AJC	

LABORATORY DETAIL REPORT

KAR Project No. : *010027*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/15/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/06/01"*
Sampled By : *HES of KAR Laboatories*
Sample Date : *1/6/01*
Sample Time : *2:30pm*
Date Received : *1/6/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/06/01	HES	

Sample ID : *"Outfall, 1/07/01"*
Sampled By : *HES of KAR Laboatories*
Sample Date : *1/7/01*
Sample Time : *10:50am*
Date Received : *1/7/01*
Sample Type : *aqueous*
KAR Sample No. : *010027-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/07/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : *010133*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/19/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/08/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *1/8/01*
Sample Time : *1:40pm*
Date Received : *1/8/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/08/01	KLA	

Sample ID : *"Outfall, 1/09/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/9/01*
Sample Time : *3:02pm*
Date Received : *1/9/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/09/01	AJC	

Sample ID : *"Outfall, 1/10/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/10/01*
Sample Time : *3:25pm*
Date Received : *1/10/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/10/01	AJC	

Sample ID : *"Outfall, 1/11/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/11/01*
Sample Time : *2:00pm*
Date Received : *1/11/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/11/01	AJC	

LABORATORY DETAIL REPORT

KAR Project No. : *010133*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/19/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/12/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/12/01*
Sample Time : *2:35pm*
Date Received : *1/12/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/12/01	AJC	

Sample ID : *"Outfall, 1/13/01"*
Sampled By : *KT of KAR Laboratories*
Sample Date : *1/13/01*
Sample Time : *11:15am*
Date Received : *1/13/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/13/01	KLT	

Sample ID : *"Outfall, 1/14/01"*
Sampled By : *KT of KAR Laboratories*
Sample Date : *1/14/01*
Sample Time : *11:45am*
Date Received : *1/14/01*
Sample Type : *aqueous*
KAR Sample No. : *010133-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/14/01	KLT	

LABORATORY DETAIL REPORT

KAR Project No. : *010245*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/25/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/15/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/15/01*
Sample Time : *2:25pm*
Date Received : *1/15/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/15/01	AJC	

Sample ID : *"Outfall, 1/16/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/16/01*
Sample Time : *3:14pm*
Date Received : *1/16/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/16/01	AJC	

Sample ID : *"Outfall, 1/17/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/17/01*
Sample Time : *2:48pm*
Date Received : *1/17/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/17/01	AJC	

Sample ID : *"Outfall, 1/18/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/18/01*
Sample Time : *1:58pm*
Date Received : *1/18/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/18/01	AJC	

LABORATORY DETAIL REPORT

KAR Project No. : *010245*

Client: *Michigan Paperboard Corporation*

Date Reported : *01/25/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/19/01"*
Sampled By : *BLF of KAR Laboratories*
Sample Date : *1/19/01*
Sample Time : *10:10am*
Date Received : *1/19/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/19/01	AJC	

Sample ID : *"Outfall, 1/20/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *1/20/01*
Sample Time : *11:44am*
Date Received : *1/22/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/20/01	ALM	

Sample ID : *"Outfall, 1/21/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *1/21/01*
Sample Time : *10:04am*
Date Received : *1/22/01*
Sample Type : *aqueous*
KAR Sample No. : *010245-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/21/01	ALM	

LABORATORY DETAIL REPORT

KAR Project No. : *010346*

Client: *Michigan Paperboard Corporation*

Date Reported : *02/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/22/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/22/01*
Sample Time : *2:48pm*
Date Received : *1/22/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/22/01	AJC	

Sample ID : *"Outfall, 1/23/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/23/01*
Sample Time : *3:05pm*
Date Received : *1/23/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/23/01	AJC	

Sample ID : *"Outfall, 1/24/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/24/01*
Sample Time : *2:56pm*
Date Received : *1/24/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/24/01	AJC	

Sample ID : *"Outfall, 1/25/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/25/01*
Sample Time : *2:50pm*
Date Received : *1/25/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	01/25/01	AJC	

LABORATORY DETAIL REPORT

KAR Project No. : *010346*

Client: *Michigan Paperboard Corporation*

Date Reported : *02/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/26/01"*
Sampled By : *MW of KAR Laboratories*
Sample Date : *1/26/01*
Sample Time : *9:00am*
Date Received : *1/26/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/26/01	AJC	

Sample ID : *"Outfall, 1/27/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/27/01*
Sample Time : *1:32pm*
Date Received : *1/29/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/27/01	SNH	

Sample ID : *"Outfall, 1/28/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/28/01*
Sample Time : *12:05pm*
Date Received : *1/29/01*
Sample Type : *aqueous*
KAR Sample No. : *010346-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/28/01	SNH	

LABORATORY DETAIL REPORT

KAR Project No. : *010450*

Client: *Michigan Paperboard Corporation*

Date Reported : *02/08/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 1/29/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/29/01*
Sample Time : *2:20pm*
Date Received : *1/29/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/29/01	KLT	

Sample ID : *"Outfall, 1/30/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/30/01*
Sample Time : *3:32pm*
Date Received : *1/30/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/30/01	AJC	

Sample ID : *"Outfall, 1/31/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *1/31/01*
Sample Time : *3:12pm*
Date Received : *1/31/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	01/31/01	AJC	

Sample ID : *"Outfall, 2/1/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/1/01*
Sample Time : *2:36pm*
Date Received : *2/1/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/01/01	AJC	

LABORATORY DETAIL REPORT

KAR Project No. : *010450*

Client: *Michigan Paperboard Corporation*

Date Reported : *02/08/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 2/2/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/2/01*
Sample Time : *2:26pm*
Date Received : *2/2/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/02/01	AJC	

Sample ID : *"Outfall, 2/03/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *2/3/01*
Sample Time : *10:30am*
Date Received : *2/5/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/03/01	HES	

Sample ID : *"Outfall, 2/04/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *2/4/01*
Sample Time : *2:30pm*
Date Received : *2/5/01*
Sample Type : *aqueous*
KAR Sample No. : *010450-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/04/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : ***010562***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***02/13/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 2/05/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/5/01***
Sample Time : ***3:04pm***
Date Received : ***2/5/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/05/01	AJC	

Sample ID : ***"Outfall, 2/06/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/6/01***
Sample Time : ***2:58pm***
Date Received : ***2/6/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/06/01	AJC	

Sample ID : ***"Outfall, 2/07/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/7/01***
Sample Time : ***2:54pm***
Date Received : ***2/7/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/07/01	AJC	

Sample ID : ***"Outfall, 2/08/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/8/01***
Sample Time : ***1:58pm***
Date Received : ***2/8/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/08/01	KLT	

LABORATORY DETAIL REPORT

KAR Project No. : ***010562***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***02/13/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 2/09/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/9/01***
Sample Time : ***3:27pm***
Date Received : ***2/9/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/09/01	KLT	

Sample ID : ***"Outfall, 2/10/01"***
Sampled By : ***ALK of KAR Laboratories***
Sample Date : ***2/10/01***
Sample Time : ***1:00pm***
Date Received : ***2/10/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/10/01	ALK	

Sample ID : ***"Outfall, 2/11/01"***
Sampled By : ***ALK of KAR Laboratories***
Sample Date : ***2/11/01***
Sample Time : ***2:15pm***
Date Received : ***2/11/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010562-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/11/01	ALK	

LABORATORY DETAIL REPORT

KAR Project No. : ***010697***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***02/21/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 2/12/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/12/01***
Sample Time : ***2:04pm***
Date Received : ***2/12/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010697-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/12/01	KLT	

Sample ID : ***"Outfall, 2/13/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/13/01***
Sample Time : ***2:34pm***
Date Received : ***2/13/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010697-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/13/01	KLT	

Sample ID : ***"Outfall, 2/14/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/14/01***
Sample Time : ***8:32am***
Date Received : ***2/14/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010697-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/14/01	KLT	

Sample ID : ***"Outfall, 2/15/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/15/01***
Sample Time : ***2:05pm***
Date Received : ***2/15/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010697-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/15/01	KLT	

LABORATORY DETAIL REPORT

KAR Project No. : *010697*

Client: *Michigan Paperboard Corporation*

Date Reported : *02/21/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 2/16/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *2/16/01*
Sample Time : *2:05pm*
Date Received : *2/16/01*
Sample Type : *aqueous*
KAR Sample No. : *010697-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	02/16/01	KLT	

Sample ID : *"Outfall, 2/17/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *2/17/01*
Sample Time : *11:25am*
Date Received : *2/17/01*
Sample Type : *aqueous*
KAR Sample No. : *010697-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	02/17/01	ALM	

Sample ID : *"Outfall, 2/18/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *2/18/01*
Sample Time : *1:50pm*
Date Received : *2/18/01*
Sample Type : *aqueous*
KAR Sample No. : *010697-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/18/01	ALM	

LABORATORY DETAIL REPORT

KAR Project No. : *010827*

Client: *Michigan Paperboard Corporation*

Date Reported : *03/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 2/19/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/19/01*
Sample Time : *1:48pm*
Date Received : *2/19/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/19/01	KLT	

Sample ID : *"Outfall, 2/20/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/20/01*
Sample Time : *2:20pm*
Date Received : *2/20/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/20/01	KLT	

Sample ID : *"Outfall, 2/21/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/21/01*
Sample Time : *2:32pm*
Date Received : *2/21/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/21/01	MTW	

Sample ID : *"Outfall, 2/22/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/22/01*
Sample Time : *3:28pm*
Date Received : *2/22/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/22/01	ALK	

LABORATORY DETAIL REPORT

KAR Project No. : *010827*

Client: *Michigan Paperboard Corporation*

Date Reported : *03/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 2/23/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *2/23/01*
Sample Time : *2:42pm*
Date Received : *2/23/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/23/01	BLF	

Sample ID : *"Outfall, 2/24/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *2/24/01*
Sample Time : *3:30pm*
Date Received : *2/24/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/24/01	HES	

Sample ID : *"Outfall, 2/25/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *2/25/01*
Sample Time : *9:30am*
Date Received : *2/25/01*
Sample Type : *aqueous*
KAR Sample No. : *010827-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/25/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : ***010965***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***03/09/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 2/26/01"***
Sampled By : ***HES of KAR Laboratories***
Sample Date : ***2/26/01***
Sample Time : ***2:30pm***
Date Received : ***2/26/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010965-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/26/01	BLF	

Sample ID : ***"Outfall, 2/27/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/27/01***
Sample Time : ***1:45pm***
Date Received : ***2/27/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010965-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/27/01	MTW	

Sample ID : ***"Outfall, 2/28/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***2/28/01***
Sample Time : ***2:06pm***
Date Received : ***2/28/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010965-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	02/28/01	BLF	

Sample ID : ***"Outfall, 3/01/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/1/01***
Sample Time : ***1:44pm***
Date Received : ***3/1/01***
Sample Type : ***aqueous***
KAR Sample No. : ***010965-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	03/01/01	MTW	

LABORATORY DETAIL REPORT

KAR Project No. : *010965*

Client: *Michigan Paperboard Corporation*

Date Reported : *03/09/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 3/02/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/2/01*
Sample Time : *2:05pm*
Date Received : *3/2/01*
Sample Type : *aqueous*
KAR Sample No. : *010965-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/02/01	BLF	

Sample ID : *"Outfall, 3/03/01"*
Sampled By : *MTW of KAR Laboratories*
Sample Date : *3/3/01*
Sample Time : *10:02am*
Date Received : *3/3/01*
Sample Type : *aqueous*
KAR Sample No. : *010965-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/03/01	MTW	

Sample ID : *"Outfall, 3/04/01"*
Sampled By : *MTW of KAR Laboratories*
Sample Date : *3/4/01*
Sample Time : *10:27am*
Date Received : *3/4/01*
Sample Type : *aqueous*
KAR Sample No. : *010965-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/04/01	MTW	

LABORATORY DETAIL REPORT

KAR Project No. : ***011081***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***03/16/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 3/05/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/5/2001***
Sample Time : ***2:10pm***
Date Received : ***3/5/2001***
Sample Type : ***aqueous***
KAR Sample No. : ***011081-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/05/01	BLF	

Sample ID : ***"Outfall, 3/06/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/6/2001***
Sample Time : ***3:35pm***
Date Received : ***3/6/2001***
Sample Type : ***aqueous***
KAR Sample No. : ***011081-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/06/01	ALK	

Sample ID : ***"Outfall, 3/07/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/7/2001***
Sample Time : ***3:52pm***
Date Received : ***3/7/2001***
Sample Type : ***aqueous***
KAR Sample No. : ***011081-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	03/07/01	ALK	

Sample ID : ***"Outfall, 3/08/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/8/2001***
Sample Time : ***3:20pm***
Date Received : ***3/8/2001***
Sample Type : ***aqueous***
KAR Sample No. : ***011081-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/08/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *011081*

Client: *Michigan Paperboard Corporation*

Date Reported : *03/16/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 3/09/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/9/2001*
Sample Time : *3:55pm*
Date Received : *3/9/2001*
Sample Type : *aqueous*
KAR Sample No. : *011081-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/09/01	ALK	

Sample ID : *"Outfall, 3/10/01"*
Sampled By : *BLF of KAR Laboratories*
Sample Date : *3/10/2001*
Sample Time : *12:03pm*
Date Received : *3/12/2001*
Sample Type : *aqueous*
KAR Sample No. : *011081-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/10/01	BLF	

Sample ID : *"Outfall, 3/11/01"*
Sampled By : *BLF of KAR Laboratories*
Sample Date : *3/11/2001*
Sample Time : *4:20pm*
Date Received : *3/12/2001*
Sample Type : *aqueous*
KAR Sample No. : *011081-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/11/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *011229*

Client: *Michigan Paperboard Corporation*

Date Reported : *03/20/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 3/12/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/12/01*
Sample Time : *3:30pm*
Date Received : *3/12/01*
Sample Type : *aqueous*
KAR Sample No. : *011229-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/12/01	BLF	

Sample ID : *"Outfall, 3/13/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/13/01*
Sample Time : *3:10pm*
Date Received : *3/13/01*
Sample Type : *aqueous*
KAR Sample No. : *011229-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/13/01	BLF	

Sample ID : *"Outfall, 3/14/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/14/01*
Sample Time : *3:02pm*
Date Received : *3/14/01*
Sample Type : *aqueous*
KAR Sample No. : *011229-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/14/01	BLF	

Sample ID : *"Outfall, 3/15/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *3/15/01*
Sample Time : *2:30pm*
Date Received : *3/15/01*
Sample Type : *aqueous*
KAR Sample No. : *011229-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/15/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : ***011229***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***03/20/01***

Project Desc. : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 3/16/01"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***3/16/01***
Sample Time : ***2:32pm***
Date Received : ***3/16/01***
Sample Type : ***aqueous***
KAR Sample No. : ***011229-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/16/01	BLF	

Sample ID : ***"Outfall, 3/17/01"***
Sampled By : ***HES of KAR Laboratories***
Sample Date : ***3/17/01***
Sample Time : ***9:45am***
Date Received : ***3/19/01***
Sample Type : ***aqueous***
KAR Sample No. : ***011229-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/17/01	HES	

Sample ID : ***"Outfall, 3/18/01"***
Sampled By : ***HES of KAR Laboratories***
Sample Date : ***3/18/01***
Sample Time : ***11:45am***
Date Received : ***3/19/01***
Sample Type : ***aqueous***
KAR Sample No. : ***011229-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	03/18/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : *011654*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/13/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/02/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *4/2/2001*
Sample Time : *2:00pm*
Date Received : *4/2/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/02/01	BLF	

Sample ID : *"Outfall, 4/03/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/3/2001*
Sample Time : *3:10pm*
Date Received : *4/3/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/03/01	BLF	

Sample ID : *"Outfall, 4/04/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/4/2001*
Sample Time : *2:30pm*
Date Received : *4/4/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/04/01	BLF	

Sample ID : *"Outfall, 4/05/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/5/2001*
Sample Time : *2:32pm*
Date Received : *4/5/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/05/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *011654*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/13/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/06/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/6/2001*
Sample Time : *3:15pm*
Date Received : *4/6/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/06/01	BLF	

Sample ID : *"Outfall, 4/07/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *4/7/2001*
Sample Time : *11:47am*
Date Received : *4/9/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/07/01	ALM	

Sample ID : *"Outfall, 4/08/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *4/8/2001*
Sample Time : *3:00pm*
Date Received : *4/9/2001*
Sample Type : *aqueous*
KAR Sample No. : *011654-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/08/01	ALM	

LABORATORY DETAIL REPORT

KAR Project No. : *011793*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/19/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/09/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/9/2001*
Sample Time : *2:06pm*
Date Received : *4/9/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/09/01	BLF	

Sample ID : *"Outfall, 4/10/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/10/2001*
Sample Time : *3:00pm*
Date Received : *4/10/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/10/01	BLF	

Sample ID : *"Outfall, 4/11/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/11/2001*
Sample Time : *2:58pm*
Date Received : *4/11/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/11/01	BLF	

Sample ID : *"Outfall, 4/12/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/12/2001*
Sample Time : *2:20pm*
Date Received : *4/12/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/12/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *011793*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/19/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/13/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/13/2001*
Sample Time : *3:38pm*
Date Received : *4/13/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/13/01	BLF	

Sample ID : *"Outfall, 4/14/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/14/2001*
Sample Time : *5:48pm*
Date Received : *4/16/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/14/01	SNH	

Sample ID : *"Outfall, 4/15/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/15/2001*
Sample Time : *4:30pm*
Date Received : *4/16/2001*
Sample Type : *aqueous*
KAR Sample No. : *011793-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/15/01	SNH	

LABORATORY DETAIL REPORT

KAR Project No. : *011908*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/24/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/16/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *4/16/2001*
Sample Time : *1:55pm*
Date Received : *4/16/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/16/01	BLF	

Sample ID : *"Outfall, 4/17/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/17/2001*
Sample Time : *2:38pm*
Date Received : *4/17/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/17/01	BLF	

Sample ID : *"Outfall, 4/18/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/18/2001*
Sample Time : *3:48pm*
Date Received : *4/18/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/18/01	BLF	

Sample ID : *"Outfall, 4/19/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/19/2001*
Sample Time : *3:20pm*
Date Received : *4/19/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/19/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *011908*

Client: *Michigan Paperboard Corporation*

Date Reported : *04/24/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/20/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/20/2001*
Sample Time : *3:22pm*
Date Received : *4/20/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/20/01	BLF	

Sample ID : *"Outfall, 4/21/01"*
Sampled By : *MTW of KAR Laboratories*
Sample Date : *4/21/2001*
Sample Time : *1308*
Date Received : *4/23/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/21/01	MTW	

Sample ID : *"Outfall, 4/22/01"*
Sampled By : *MTW of KAR Laboratories*
Sample Date : *4/22/2001*
Sample Time : *1245*
Date Received : *4/23/2001*
Sample Type : *aqueous*
KAR Sample No. : *011908-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/22/01	MTW	

LABORATORY DETAIL REPORT

KAR Project No. : *012028*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/03/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/23/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *4/23/2001*
Sample Time : *12:55pm*
Date Received : *4/23/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/23/01	BLF	

Sample ID : *"Outfall, 4/24/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *4/24/2001*
Sample Time : *1:15pm*
Date Received : *4/24/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/24/01	BLF	

Sample ID : *"Outfall, 4/25/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *4/25/2001*
Sample Time : *1:15pm*
Date Received : *4/25/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	04/25/01	BLF	

Sample ID : *"Outfall, 4/26/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *4/26/2001*
Sample Time : *1:05pm*
Date Received : *4/26/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	04/26/01	ALK	

LABORATORY DETAIL REPORT

KAR Project No. : *012028*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/03/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/27/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/27/2001*
Sample Time : *2:58pm*
Date Received : *4/27/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/27/01	BLF	

Sample ID : *"Outfall, 4/28/01"*
Sampled By : *BLF of KAR Laboratories*
Sample Date : *4/28/2001*
Sample Time : *11:30am*
Date Received : *4/30/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/28/01	BLF	

Sample ID : *"Outfall, 4/29/01"*
Sampled By : *BLF of KAR Laboratories*
Sample Date : *4/29/2001*
Sample Time : *11:30am*
Date Received : *4/30/2001*
Sample Type : *aqueous*
KAR Sample No. : *012028-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/29/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012163*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/10/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/30/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/30/2001*
Sample Time : *3:08pm*
Date Received : *4/30/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	04/30/01	BLF	

Sample ID : *"Outfall, 5/01/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/1/2001*
Sample Time : *3:42pm*
Date Received : *5/1/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/01/01	BLF	

Sample ID : *"Outfall, 5/02/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/2/2001*
Sample Time : *3:18pm*
Date Received : *5/2/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/02/01	BLF	

Sample ID : *"Outfall, 5/03/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/3/2001*
Sample Time : *3:38pm*
Date Received : *5/3/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/03/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012163*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/10/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/04/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/4/2001*
Sample Time :
Date Received : *5/4/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/04/01	BLF	

Sample ID : *"Outfall, 5/05/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/5/2001*
Sample Time : *12:30pm*
Date Received : *5/5/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/05/01	SNH	

Sample ID : *"Outfall, 5/06/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/6/2001*
Sample Time : *11:42am*
Date Received : *5/6/2001*
Sample Type : *aqueous*
KAR Sample No. : *012163-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/06/01	SNH	

LABORATORY DETAIL REPORT

KAR Project No. : *012323*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/16/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/07/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/7/01*
Sample Time : *3:05pm*
Date Received : *5/7/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/07/01	BLF	

Sample ID : *"Outfall, 5/08/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/8/01*
Sample Time : *3:30pm*
Date Received : *5/8/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/08/01	BLF	

Sample ID : *"Outfall, 5/09/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/9/01*
Sample Time : *3:22pm*
Date Received : *5/9/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/09/01	BLF	

Sample ID : *"Outfall, 5/10/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *5/10/01*
Sample Time : *2:45pm*
Date Received : *5/10/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/10/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012323*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/16/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/11/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *5/11/01*
Sample Time : *2:45pm*
Date Received : *5/11/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/11/01	BLF	

Sample ID : *"Outfall, 5/12/01"*
Sampled By : *ALK of KAR Laboratories*
Sample Date : *5/12/01*
Sample Time : *6:55pm*
Date Received : *5/12/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/12/01	ALK	

Sample ID : *"Outfall, 5/13/01"*
Sampled By : *ALK of KAR Laboratories*
Sample Date : *5/13/01*
Sample Time : *11:45am*
Date Received : *5/13/01*
Sample Type : *aqueous*
KAR Sample No. : *012323-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/13/01	ALK	

LABORATORY DETAIL REPORT

KAR Project No. : *012458*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/22/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/14/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *5/14/01*
Sample Time : *2:25pm*
Date Received : *5/14/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/14/01	BLF	

Sample ID : *"Outfall, 5/15/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/15/01*
Sample Time : *2:35pm*
Date Received : *5/15/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/15/01	BLF	

Sample ID : *"Outfall, 5/16/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/16/01*
Sample Time : *2:18pm*
Date Received : *5/16/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/16/01	BLF	

Sample ID : *"Outfall, 5/17/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/17/01*
Sample Time : *3:05pm*
Date Received : *5/17/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/17/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012458*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/22/01*

Project
Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/18/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/18/01*
Sample Time : *3:04pm*
Date Received : *5/18/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/18/01	BLF	

Sample ID : *"Outfall, 5/19/01"*
Sampled By : *DME of KAR Laboratories*
Sample Date : *5/19/01*
Sample Time : *11:45am*
Date Received : *5/19/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/19/01	BLF	

Sample ID : *"Outfall, 5/20/01"*
Sampled By : *DME of KAR Laboratories*
Sample Date : *5/20/01*
Sample Time : *4:15pm*
Date Received : *5/20/01*
Sample Type : *aqueous*
KAR Sample No. : *012458-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/20/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012582*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/31/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/21/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/21/01*
Sample Time : *12:52pm*
Date Received : *5/21/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/21/01	BLF	

Sample ID : *"Outfall, 5/22/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/22/01*
Sample Time : *2:48pm*
Date Received : *5/22/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/22/01	BLF	

Sample ID : *"Outfall, 5/23/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/23/01*
Sample Time : *8:18am*
Date Received : *5/23/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/23/01	BLF	

Sample ID : *"Outfall, 5/24/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/24/01*
Sample Time : *2:24pm*
Date Received : *5/24/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/24/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012582*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/31/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/25/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/25/01*
Sample Time : *11:18am*
Date Received : *5/25/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/25/01	BLF	

Sample ID : *"Outfall, 5/26/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *5/26/01*
Sample Time : *4:06pm*
Date Received : *5/26/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/26/01	ALM	

Sample ID : *"Outfall, 5/27/01"*
Sampled By : *KLT of KAR Laboratories*
Sample Date : *5/27/01*
Sample Time : *12:43pm*
Date Received : *5/27/01*
Sample Type : *aqueous*
KAR Sample No. : *012582-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	05/27/01	KLT	

LABORATORY DETAIL REPORT

KAR Project No. : *012727*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/11/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/29/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/29/01*
Sample Time : *2:56pm*

Date Received : *5/29/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/29/01	BLF	

Sample ID : *"Outfall, 5/30/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/30/01*
Sample Time : *2:15pm*

Date Received : *5/30/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/30/01	BLF	

Sample ID : *"Outfall, 5/31/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/31/01*
Sample Time : *3:05pm*

Date Received : *5/31/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	05/31/01	BLF	

Sample ID : *"Outfall, 6/01/01"*

Sampled By : *KLT of KAR Laboratories*
Sample Date : *6/1/01*
Sample Time : *3:10pm*

Date Received : *6/1/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/01/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012727*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/11/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/02/01"*

Sampled By : *HES of KAR Laboratories*
Sample Date : *6/2/01*
Sample Time : *11:45am*

Date Received : *6/2/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/02/01	HES	

Sample ID : *"Outfall, 6/03/01"*

Sampled By : *HES of KAR Laboratories*
Sample Date : *6/3/01*
Sample Time : *10:45am*

Date Received : *6/3/01*
Sample Type : *aqueous*
KAR Sample No. : *012727-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/03/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : *012831*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/13/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/04/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/4/01*
Sample Time : *3:38pm*
Date Received : *6/4/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/04/01	BLF	

Sample ID : *"Outfall, 6/05/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/5/01*
Sample Time : *3:00pm*
Date Received : *6/5/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/05/01	BLF	

Sample ID : *"Outfall, 6/06/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/6/01*
Sample Time : *3:15pm*
Date Received : *6/6/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/06/01	BLF	

Sample ID : *"Outfall, 6/07/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/7/01*
Sample Time : *1:58pm*
Date Received : *6/7/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/07/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *012831*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/13/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/08/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/8/01*
Sample Time : *2:20pm*

Date Received : *6/8/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/08/01	BLF	

Sample ID : *"Outfall, 6/09/01"*

Sampled By : *ALM of KAR Laboratories*
Sample Date : *6/9/01*
Sample Time : *3:58pm*

Date Received : *6/9/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/09/01	ALM	

Sample ID : *"Outfall, 6/10/01"*

Sampled By : *ALM of KAR Laboratories*
Sample Date : *6/10/01*
Sample Time : *3:27pm*

Date Received : *6/10/01*
Sample Type : *aqueous*
KAR Sample No. : *012831-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/10/00	ALM	

LABORATORY DETAIL REPORT

KAR Project No. : *013000*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/21/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/11/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *6/11/01*
Sample Time : *2:15pm*
Date Received : *6/11/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/11/01	BLF	

Sample ID : *"Outfall, 6/12/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/12/01*
Sample Time : *2:44pm*
Date Received : *6/12/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/12/01	BLF	

Sample ID : *"Outfall, 6/13/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/13/01*
Sample Time : *3:28pm*
Date Received : *6/13/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/13/01	BLF	

Sample ID : *"Outfall, 6/14/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/14/01*
Sample Time : *2:40pm*
Date Received : *6/14/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/14/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013000*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/21/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/15/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/15/01*
Sample Time : *2:48pm*

Date Received : *6/15/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	06/15/01	BLF	

Sample ID : *"Outfall, 6/16/01"*

Sampled By : *BLF of KAR Laboratories*
Sample Date : *6/16/01*
Sample Time : *3:25pm*

Date Received : *6/16/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	06/16/01	BLF	

Sample ID : *"Outfall, 6/17/01"*

Sampled By : *BLF of KAR Laboratories*
Sample Date : *6/17/01*
Sample Time : *3:25pm*

Date Received : *6/17/01*
Sample Type : *aqueous*
KAR Sample No. : *013000-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	06/17/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013128*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/18/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/18/01*
Sample Time : *3:00pm*
Date Received : *6/18/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/18/01	BLF	

Sample ID : *"Outfall, 6/19/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/19/01*
Sample Time : *3:42pm*
Date Received : *6/19/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/19/01	BLF	

Sample ID : *"Outfall, 6/20/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/20/01*
Sample Time : *3:55pm*
Date Received : *6/20/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/20/01	BLF	

Sample ID : *"Outfall, 6/21/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/21/01*
Sample Time : *2:08pm*
Date Received : *6/21/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/21/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013128*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/22/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/22/01*
Sample Time : *2:32pm*

Date Received : *6/22/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual(field,DPD)	<0 02	mg/L	SM(18) 4500-Cl G	06/22/01	SNH	

Sample ID : *"Outfall, 6/23/01"*

Sampled By : *ALK of KAR Laboratories*
Sample Date : *6/23/01*
Sample Time : *10:15am*

Date Received : *6/23/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/23/01	ALK	

Sample ID : *"Outfall, 6/24/01"*

Sampled By : *ALK of KAR Laboratories*
Sample Date : *6/24/01*
Sample Time : *12:20pm*

Date Received : *6/24/01*
Sample Type : *aqueous*
KAR Sample No. : *013128-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/24/01	ALK	

LABORATORY DETAIL REPORT

KAR Project No. : *013278*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/09/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/25/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/25/01*
Sample Time : *2:58pm*
Date Received : *6/25/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/25/01	BLF	

Sample ID : *"Outfall, 6/26/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/26/01*
Sample Time : *3:10pm*
Date Received : *6/26/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/26/01	BLF	

Sample ID : *"Outfall, 6/27/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/27/01*
Sample Time : *2:50pm*
Date Received : *6/27/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/27/01	BLF	

Sample ID : *"Outfall, 6/28/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/28/01*
Sample Time :
Date Received : *6/28/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	06/28/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013278*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/09/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/29/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/29/01*
Sample Time : *2:55pm*
Date Received : *6/29/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	06/29/01	BLF	

Sample ID : *"Outfall, 6/30/01"*
Sampled By : *DE of KAR Laboratories*
Sample Date : *6/30/01*
Sample Time : *12:15pm*
Date Received : *6/30/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	06/30/01	DME	

Sample ID : *"Outfall, 7/01/01"*
Sampled By : *DE of KAR Laboratories*
Sample Date : *7/1/01*
Sample Time : *2:45pm*
Date Received : *7/1/01*
Sample Type : *aqueous*
KAR Sample No. : *013278-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/01/01	DME	

LABORATORY DETAIL REPORT

KAR Project No. : *013431*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/16/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/02/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/2/01*
Sample Time : *3:16pm*
Date Received : *7/2/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/02/01	BLF	

Sample ID : *"Outfall, 7/03/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/3/01*
Sample Time : *2:38pm*
Date Received : *7/3/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/03/01	BLF	

Sample ID : *"Outfall, 7/05/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/5/01*
Sample Time : *2:38pm*
Date Received : *7/5/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/05/01	BLF	

Sample ID : *"Outfall, 7/06/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/6/01*
Sample Time : *2:44pm*
Date Received : *7/6/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/06/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013431*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/16/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/07/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/7/01*
Sample Time : *5:00am*

Date Received : *7/7/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/07/01	SNH	

Sample ID : *"Outfall, 7/08/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/8/01*
Sample Time : *1:38pm*

Date Received : *7/8/01*
Sample Type : *aqueous*
KAR Sample No. : *013431-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/08/01	SNH	

LABORATORY DETAIL REPORT

KAR Project No. : *013559*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/19/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/09/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/9/01*
Sample Time : *1:48pm*
Date Received : *7/9/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/09/01	BLF	

Sample ID : *"Outfall, 7/10/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/10/01*
Sample Time : *3:08pm*
Date Received : *7/10/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/10/01	BLF	

Sample ID : *"Outfall, 7/11/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/11/01*
Sample Time : *3:00pm*
Date Received : *7/11/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/11/01	BLF	

Sample ID : *"Outfall, 7/12/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/12/01*
Sample Time : *2:24pm*
Date Received : *7/12/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/12/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013559*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/19/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/13/01"*

Sampled By : *ALM of KAR Laboratories*
Sample Date : *7/13/01*
Sample Time : *1:49pm*

Date Received : *7/13/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/13/01	BLF	

Sample ID : *"Outfall, 7/14/01"*

Sampled By : *ALM of KAR Laboratories*
Sample Date : *7/14/01*
Sample Time : *5:56pm*

Date Received : *7/14/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/14/01	ALM	

Sample ID : *"Outfall, 7/15/01"*

Sampled By : *ALM of KAR Laboratories*
Sample Date : *7/15/01*
Sample Time : *10:30am*

Date Received : *7/15/01*
Sample Type : *aqueous*
KAR Sample No. : *013559-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/15/01	ALM	

LABORATORY DETAIL REPORT

KAR Project No. : *013704*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/30/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/16/01"*
Sampled By : *ALM of KAR Laboratories*
Sample Date : *7/16/01*
Sample Time : *12:05pm*
Date Received : *7/16/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/16/01	DME	

Sample ID : *"Outfall, 7/17/01"*
Sampled By : *HES of KAR Laboratories*
Sample Date : *7/17/01*
Sample Time : *1:50pm*
Date Received : *7/17/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/17/01	BLF	

Sample ID : *"Outfall, 7/18/01"*
Sampled By : *GJE of KAR Laboratories*
Sample Date : *7/18/01*
Sample Time : *1:10pm*
Date Received : *7/18/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/18/01	BLF	

Sample ID : *"Outfall, 7/19/01"*
Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/19/01*
Sample Time : *2:24pm*
Date Received : *7/19/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	07/19/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013704*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/30/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/20/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/20/01*
Sample Time : *1:35pm*

Date Received : *7/20/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/20/01	BLF	

Sample ID : *"Outfall, 7/21/01"*

Sampled By : *HES of KAR Laboratories*
Sample Date : *7/21/01*
Sample Time : *10:17am*

Date Received : *7/21/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/21/01	HES	

Sample ID : *"Outfall, 7/22/01"*

Sampled By : *HES of KAR Laboratories*
Sample Date : *7/22/01*
Sample Time : *8:55am*

Date Received : *7/22/01*
Sample Type : *aqueous*
KAR Sample No. : *013704-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/22/01	HES	

LABORATORY DETAIL REPORT

KAR Project No. : *013862*

Client: *Michigan Paperboard Corporation*

Date Reported : *08/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/23/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/23/01*
Sample Time : *3:06pm*

Date Received : *7/23/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/23/01	BLF	

Sample ID : *"Outfall, 7/24/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/24/01*
Sample Time : *3:18pm*

Date Received : *7/24/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/24/01	BLF	

Sample ID : *"Outfall, 7/25/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/25/01*
Sample Time : *2:36pm*

Date Received : *7/25/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/25/01	BLF	

Sample ID : *"Outfall, 7/26/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/26/01*
Sample Time : *2:12pm*

Date Received : *7/26/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/26/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *013862*

Client: *Michigan Paperboard Corporation*

Date Reported : *08/02/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/27/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/27/01*
Sample Time : *3:14pm*

Date Received : *7/27/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/27/01	BLF	

Sample ID : *"Outfall, 7/28/01"*

Sampled By : *MTW of KAR Laboratories*
Sample Date : *7/28/01*
Sample Time : *8:06am*

Date Received : *7/28/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/28/01	MTW	

Sample ID : *"Outfall, 7/29/01"*

Sampled By : *MTW of KAR Laboratories*
Sample Date : *7/29/01*
Sample Time : *8:21am*

Date Received : *7/29/01*
Sample Type : *aqueous*
KAR Sample No. : *013862-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/29/01	MTW	

LABORATORY DETAIL REPORT

KAR Project No. : *014028*

Client: *Michigan Paperboard Corporation*

Date Reported : *08/07/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/30/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/30/01*
Sample Time : *2:55pm*

Date Received : *7/30/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/30/01	BLF	

Sample ID : *"Outfall, 7/31/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/31/01*
Sample Time : *1:44pm*

Date Received : *7/31/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	07/31/01	BLF	

Sample ID : *"Outfall, 8/01/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/1/01*
Sample Time : *3:22pm*

Date Received : *8/1/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	08/01/01	BLF	

Sample ID : *"Outfall, 8/02/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/2/01*
Sample Time : *2:45pm*

Date Received : *8/2/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	08/02/01	BLF	

LABORATORY DETAIL REPORT

KAR Project No. : *014028*

Client: *Michigan Paperboard Corporation*

Date Reported : *08/07/01*

Project Desc. : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 8/03/01"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/3/01*
Sample Time : *2:52pm*

Date Received : *8/3/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	08/03/01	BLF	

Sample ID : *"Outfall, 8/04/01"*

Sampled By : *BLF of KAR Laboratories*
Sample Date : *8/4/01*
Sample Time : *1:00pm*

Date Received : *8/4/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	08/04/01	BLF	

Sample ID : *"Outfall, 8/05/01"*

Sampled By : *BLF of KAR Laboratories*
Sample Date : *8/5/01*
Sample Time : *1:30pm*

Date Received : *8/5/01*
Sample Type : *aqueous*
KAR Sample No. : *014028-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	08/05/01	BLF	

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(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/30/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: Sandy Date: 4-30-97 Time: 12:34 Pm

KAR *Laboratories, Inc.*
4425 Manchester
Kalamazoo, MI 49001
(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/29/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: KB Date: 4-29-97 Time: 1:05

4425 Manchester
Kalamazoo, MI 49001
(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/27/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: _____ Date: _____ Time: _____

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Kalamazoo, MI 49001
(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/26/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: Sandy Date: 4-28-97 Time: 10:35AM

'425 Manchester
.alamazoo, MI 49001
(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/25/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: Sandy Date: 4-25-97 Time: 3:35PM

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4425 Manchester
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(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/24/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: KB Date: 4-24-97 Time: 2:15

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Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/23/97 is: < 0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: Wendy Date: 4-23-97 Time: 2:51 PM

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(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/22/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: KB Date: 4-22-97 Time: 1:22

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Important

FAX TRANSMISSION SHEET

MESSAGE TO: Michigan Paperboard

ATTENTION: Jim Hosking/Edison Yiu

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Using Orion Electrode 97-70 per 40 CFR 136.3, the Total Residual Chlorine result for the sample collected 4/21/97 is: <0.02 mg/L. This result will be included in a final weekly report to follow according to our standard 10-day turnaround. Call if there are any questions.

Sent By: Sandy Date. 4-22-97 Time: 12:26pm

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(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: MI Paperboard

ATTENTION: Jim Hosking

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS: Residual Chlorine result on sample collected 4/18/97:

<0.02 mg/L

DA

Sent By: DB Date: 4-18-97 Time: 11:31

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(616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: MI Paperboard

ATTENTION: Jim Hosking

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Residual Chlorine result on sample collected 4/17/97:

<0.02 mg/L

DA

Sent By: _____ Date: _____ Time: _____

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Important

FAX TRANSMISSION SHEET

MESSAGE TO: MI Paperboard

ATTENTION: Jim Hosking

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS : Residual Chlorine result on sample collected 4/17/97:

<0.02 mg/L

DA

Sent By: _____ Date: _____ Time: _____

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616) 381-9666

Important

FAX TRANSMISSION SHEET

MESSAGE TO: MI Paperboard

ATTENTION: Mike Scholly

FAX NUMBER: (616) 963-4425

MESSAGE FROM: Dave Alkema

FAX NUMBER: 616-381-9698

Number of Pages Following Cover Sheet: zero

COMMENTS: Mike, per Jim Hoskings request, we've started daily sampling analysis using the iodometric dectrode. Results over the weekend were both <0.02 mg/L for total residual chlorine. I'll be faxing over a revised quotation as we did not realize weekend sampling and analysis was needed. I'll touch base with you this afternoon.

D. Alkema

Sent By: KB Date: 4-21-97 Time: 11:47

LABORATORY REPORT

KAR Project No. : ***971214***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/01/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 4/16/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***4/16/97***
Sample Time : ***2:52pm***

Date Received : ***4/16/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971214-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(19) 4500-Cl I*	*4/16/97*	*RJC*	

Sample ID : ***"Outfall, 4/17/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***4/17/97***
Sample Time : ***2:04pm***

Date Received : ***4/17/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971214-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(19) 4500-Cl I*	*4/17/97*	*RJC*	

Sample ID : ***"Outfall, 4/18/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***4/18/97***
Sample Time : ***10:50am***

Date Received : ***4/18/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971214-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(19) 4500-Cl I*	*4/18/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971214***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/01/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 4/19/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/19/97*
Sample Time : *10:52am*

Date Received : *4/19/97*
Sample Type : *aqueous*
KAR Sample No. : *971214-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(19) 4500-Cl I*	*4/19/97*	*RJC*	

Sample ID : ***"Outfall, 4/20/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/20/97*
Sample Time : *11:39am*

Date Received : *4/20/97*
Sample Type : *aqueous*
KAR Sample No. : *971214-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(19) 4500-Cl I*	*4/20/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : *971254*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/05/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/21/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/21/97*
Sample Time : *11:27am*

Date Received : *4/21/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(19) 4500-Cl I	4/21/97	RJC	

Sample ID : *"Outfall, 4/22/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/22/97*
Sample Time : *12:20pm*

Date Received : *4/22/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/22/97	RJC	

Sample ID : *"Outfall, 4/23/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/23/97*
Sample Time : *1:36pm*

Date Received : *4/23/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/23/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***971254***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/05/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 4/24/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/24/97*
Sample Time : *1:36pm*

Date Received : *4/24/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*4/24/97*	*CCP*	

Sample ID : ***"Outfall, 4/25/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/25/97*
Sample Time : *2:32pm*

Date Received : *4/25/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*4/25/97*	*CCP*	

Sample ID : ***"Outfall, 4/26/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/26/97*
Sample Time : *4:28pm*

Date Received : *4/26/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*4/26/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *971254*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/05/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 4/27/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/27/97*
Sample Time : *5:02pm*

Date Received : *4/27/97*
Sample Type : *aqueous*
KAR Sample No. : *971254-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/27/97	SNH	

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LABORATORY REPORT

KAR Project No. : ***971338***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 4/28/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/28/97*
Sample Time : *2:48pm*

Date Received : *4/28/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/28/97	CCP	

Sample ID : ***"Outfall, 4/29/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/29/97*
Sample Time : *11:56am*

Date Received : *4/29/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/29/97	RJC	

Sample ID : ***"Outfall, 4/30/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *4/30/97*
Sample Time : *11:36am*

Date Received : *4/30/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	4/30/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***971338***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/1/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/1/97*
Sample Time : *10:42am*

Date Received : *5/1/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/1/97*	*CCP*	

Sample ID : ***"Outfall, 5/02/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/2/97*
Sample Time : *1:56pm*

Date Received : *5/2/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/2/97*	*CCP*	

Sample ID : ***"Outfall, 5/03/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/3/97*
Sample Time : *6:02pm*

Date Received : *5/3/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/3/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***971338***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/04/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/4/97*
Sample Time : *3:00pm*

Date Received : *5/4/97*
Sample Type : *aqueous*
KAR Sample No. : *971338-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/4/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *971444*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/19/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/05/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/5/97*
Sample Time : *3:12pm*

Date Received : *5/5/97*
Sample Type : *aqueous*
KAR Sample No. : *971444-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/5/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : *971444*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/19/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/06/97"*

Sampled By : *SNH of KAR Laboratories*

Sample Date : *5/6/97*

Sample Time : *2:02pm*

Date Received : *5/6/97*

Sample Type : *aqueous*

KAR Sample No. : *971444-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/6/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : *971444*

Client: *Michigan Paperboard Corporation*

Date Reported : *05/19/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/07/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/7/97*
Sample Time : *11:32am*

Date Received : *5/7/97*
Sample Type : *aqueous*
KAR Sample No. : *971444-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*SM(18) 4500-Cl I*	*5/7/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***971444***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/08/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/8/97*
Sample Time : *2:45pm*

Date Received : *5/8/97*
Sample Type : *aqueous*
KAR Sample No. : *971444-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/8/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971444***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/09/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/9/97***
Sample Time : ***10:49am***

Date Received : ***5/9/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971444-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/9/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971444***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/10/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/10/97*
Sample Time : *10:10am*

Date Received : *5/10/97*
Sample Type : *aqueous*
KAR Sample No. : *971444-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*5/10/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971444***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/11/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/11/97*
Sample Time : *3:10pm*

Date Received : *5/11/97*
Sample Type : *aqueous*
KAR Sample No. : *971444-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*SM(18) 4500-Cl I*	*5/11/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971556***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/12/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/12/97***
Sample Time : ***3:37pm***

Date Received : ***5/12/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/12/97*	*CCP*	

Sample ID : ***"Outfall, 5/13/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/13/97***
Sample Time : ***1:44pm***

Date Received : ***5/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/13/97*	*CCP*	

Sample ID : ***"Outfall, 5/14/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/14/97***
Sample Time : ***3:50pm***

Date Received : ***5/14/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/14/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***971556***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/15/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/15/97***
Sample Time : ***3:46pm***

Date Received : ***5/15/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/15/97*	*CCP*	

Sample ID : ***"Outfall, 5/16/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/16/97***
Sample Time : ***2:06pm***

Date Received : ***5/16/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/16/97*	*SNH*	

Sample ID : ***"Outfall, 5/17/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/17/97***
Sample Time : ***2:20pm***

Date Received : ***5/17/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/21/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***971556***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***05/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/18/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***5/18/97***
Sample Time : ***1:51pm***

Date Received : ***5/18/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971556-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*5/18/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *971662*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/02/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 5/19/97"*

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/19/97*
Sample Time : *3:47pm*

Date Received : *5/19/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	5/19/97	CCP	

Sample ID : *"Outfall, 5/20/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/20/97*
Sample Time : *2:22pm*

Date Received : *5/20/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	5/20/97	CCP	

Sample ID : *"Outfall, 5/21/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *5/21/97*
Sample Time :

Date Received : *5/21/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	5/21/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***971662***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/22/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/22/97*
Sample Time : *2:30pm*

Date Received : *5/22/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	5/22/97	CCP	

Sample ID : ***"Outfall, 5/23/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/23/97*
Sample Time : *2:10pm*

Date Received : *5/23/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	5/23/97	CCP	

Sample ID : ***"Outfall, 5/24/97"***

Sampled By : *PL of KAR Laboratories*
Sample Date : *5/24/97*
Sample Time : *11:03am*

Date Received : *5/24/97*
Sample Type : *aqueous*
KAR Sample No. : *971662-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(19) 4500-Cl G	5/24/97	PML	

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LABORATORY REPORT

KAR Project No. : ***971662***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/25/97"***

Sampled By : ***PL of KAR Laboratories***
Sample Date : ***5/25/97***
Sample Time : ***12:55pm***

Date Received : ***5/25/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971662-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*SM(19) 4500-Cl G*	*5/25/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***971750***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/09/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/26/97"***

Sampled By : *PL of KAR Laboratories*
Sample Date : *5/26/97*
Sample Time : *12:20pm*

Date Received : *5/26/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(19) 4500-Cl G	5/26/97	PML	

Sample ID : ***"Outfall, 5/27/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/27/97*
Sample Time :

Date Received : *5/27/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	5/27/97	CCP	

Sample ID : ***"Outfall, 5/28/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/28/97*
Sample Time : *1:50pm*

Date Received : *5/28/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	5/28/97	DRA	

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LABORATORY REPORT

KAR Project No. : ***971750***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/09/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 5/29/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *5/29/97*
Sample Time : *3:45pm*

Date Received : *5/29/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	5/29/97	DRA	

Sample ID : ***"Outfall, 5/30/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *5/30/97*
Sample Time : *3:05pm*

Date Received : *5/30/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	5/30/97	CCP	

Sample ID : ***"Outfall, 5/31/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *5/31/97*
Sample Time : *10:40am*

Date Received : *5/31/97*
Sample Type : *aqueous*
KAR Sample No. : *971750-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	SM(18) 4500-Cl I	5/31/97	RJC	

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LABORATORY REPORT

KAR Project No. : ***971750***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/09/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/01/97"***

Sampled By : ***RJC of KAR Laboratories***
Sample Date : ***6/1/97***
Sample Time : ***10:20am***

Date Received : ***6/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971750-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*6/1/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***971819***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/13/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/02/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/2/97*
Sample Time : *3:20pm*

Date Received : *6/2/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/2/97	CCP	

Sample ID : ***"Outfall, 6/03/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/3/97*
Sample Time : *2:57pm*

Date Received : *6/3/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/3/97	CCP	

Sample ID : ***"Outfall, 6/04/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/4/97*
Sample Time : *2:46pm*

Date Received : *6/4/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/4/97	CCP	

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LABORATORY REPORT

KAR Project No. : *971819*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/13/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/05/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/5/97*
Sample Time : *2:55pm*

Date Received : *6/5/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/5/97	CCP	

Sample ID : *"Outfall, 6/06/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/6/97*
Sample Time : *3:54pm*

Date Received : *6/6/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/6/97	CCP	

Sample ID : *"Outfall, 6/07/97"*

Sampled By : *GJE of KAR Laboratories*
Sample Date : *6/7/97*
Sample Time : *8:45am*

Date Received : *6/7/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/7/97	GJE	

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LABORATORY REPORT

KAR Project No. : ***971819***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/13/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/08/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *6/8/97*
Sample Time : *9:50am*

Date Received : *6/8/97*
Sample Type : *aqueous*
KAR Sample No. : *971819-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/8/97*	*GJE*	*Problem encountered during analysis; result is approximate.*

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LABORATORY REPORT

KAR Project No. : ***971946***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/23/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/09/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/9/97*
Sample Time : *2:48pm*

Date Received : *6/9/97*
Sample Type : *aqueous*
KAR Sample No. : *971946-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/9/97	CCP	

Sample ID : ***"Outfall, 6/10/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/10/97*
Sample Time : *3:07pm*

Date Received : *6/10/97*
Sample Type : *aqueous*
KAR Sample No. : *971946-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/10/97	CCP	

Sample ID : ***"Outfall, 6/11/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/11/97*
Sample Time : *2:54pm*

Date Received : *6/11/97*
Sample Type : *aqueous*
KAR Sample No. : *971946-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	6/11/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***971946***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/23/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/12/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/12/97***
Sample Time : ***2:34pm***

Date Received : ***6/12/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971946-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/12/97*	*CCP*	

Sample ID : ***"Outfall, 6/13/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/13/97***
Sample Time : ***2:56pm***

Date Received : ***6/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971946-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/13/97*	*CCP*	

Sample ID : ***"Outfall, 6/14/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/14/97***
Sample Time : ***2:44pm***

Date Received : ***6/14/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971946-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/14/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***971946***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/23/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/15/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/15/97***
Sample Time : ***4:15pm***

Date Received : ***6/15/97***
Sample Type : ***aqueous***
KAR Sample No. : ***971946-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/15/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *972061*

Client: *Michigan Paperboard Corporation*

Date Reported : *06/27/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 6/16/97"*

Sampled By : *RJC of KAR Laboratories*
Sample Date : *6/16/97*
Sample Time :

Date Received : *6/16/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/16/97*	*CCP*	

Sample ID : *"Outfall, 6/17/97"*

Sampled By : *RJC & CCP of KAR Laboratories*
Sample Date : *6/17/97*
Sample Time : *2:52pm*

Date Received : *6/17/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/17/97*	*CCP*	

Sample ID : *"Outfall, 6/18/97"*

Sampled By : *RJC of KAR Laboratories*
Sample Date : *6/18/97*
Sample Time : *3:08pm*

Date Received : *6/18/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/18/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972061***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/27/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/19/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/19/97*
Sample Time : *2:27pm*

Date Received : *6/19/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/19/97	CCP	

Sample ID : ***"Outfall, 6/20/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *6/20/97*
Sample Time : *2:42pm*

Date Received : *6/20/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/20/97	CCP	

Sample ID : ***"Outfall, 6/21/97"***

Sampled By : *CCP of KAR Laboratories*
Sample Date : *6/21/97*
Sample Time : *9:45am*

Date Received : *6/23/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/21/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***972061***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***06/27/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/22/97"***

Sampled By : *CCP of KAR Laboratories*
Sample Date : *6/22/97*
Sample Time : *8:21am*

Date Received : *6/23/97*
Sample Type : *aqueous*
KAR Sample No. : *972061-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/22/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972159***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/23/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/23/97***
Sample Time : ***1:56pm***

Date Received : ***6/23/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/23/97*	*CCP*	

Sample ID : ***"Outfall, 6/24/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/24/97***
Sample Time : ***4:09pm***

Date Received : ***6/24/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/24/97*	*CCP*	

Sample ID : ***"Outfall, 6/25/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/25/97***
Sample Time : ***4:00pm***

Date Received : ***6/25/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/25/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972159***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/26/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/26/97***
Sample Time : ***2:17pm***

Date Received : ***6/26/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/26/97	CCP	

Sample ID : ***"Outfall, 6/27/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/27/97***
Sample Time : ***3:50pm***

Date Received : ***6/27/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/27/97	CCP	

Sample ID : ***"Outfall, 6/28/97"***

Sampled By : ***PL of KAR Laboratories***
Sample Date : ***6/28/97***
Sample Time : ***9:55am***

Date Received : ***6/28/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	6/28/97	PML	

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LABORATORY REPORT

KAR Project No. : ***972159***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/29/97"***

Sampled By : ***PL of KAR Laboratories***
Sample Date : ***6/29/97***
Sample Time : ***10:00am***

Date Received : ***6/29/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972159-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/29/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***972242***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/11/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 6/30/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***6/30/97***
Sample Time : ***3:12pm***

Date Received : ***6/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972242-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*6/30/97*	*CCP*	

Sample ID : ***"Outfall, 7/01/97"***

Sampled By : ***RC of KAR Laboratories***
Sample Date : ***7/1/97***
Sample Time : ***2:52pm***

Date Received : ***7/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972242-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/1/97*	*CCP*	

Sample ID : ***"Outfall, 7/02/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***7/2/97***
Sample Time : ***3:28pm***

Date Received : ***7/2/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972242-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/2/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : 972242
Client: *Michigan Paperboard Corporation* **Date Reported : *07/11/97***

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/03/97"*
Sampled By : *SNH of KAR Laboratories* **Date Received : *7/3/97***
Sample Date : *7/3/97* **Sample Type : *aqueous***
Sample Time : *3:00pm* **KAR Sample No. : *972242-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/3/97*	*CCP*	

Sample ID : *"Outfall, 7/04/97"*
Sampled By : *SNH of KAR Laboratories* **Date Received : *7/4/97***
Sample Date : *7/4/97* **Sample Type : *aqueous***
Sample Time : *11:50am* **KAR Sample No. : *972242-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/4/97*	*SNH*	

Sample ID : *"Outfall, 7/05/97"*
Sampled By : *SNH of KAR Laboratories* **Date Received : *7/5/97***
Sample Date : *7/5/97* **Sample Type : *aqueous***
Sample Time : *2:50pm* **KAR Sample No. : *972242-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/5/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***972242***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/11/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/06/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***7/6/97***
Sample Time : ***4:00pm***

Date Received : ***7/6/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972242-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/6/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *972330*

Client: *Michigan Paperboard Corporation*

Date Reported : *07/21/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 7/07/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/7/97*
Sample Time : *2:55pm*

Date Received : *7/7/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/7/97*	*CCP*	

Sample ID : *"Outfall, 7/08/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/8/97*
Sample Time : *1:40pm*

Date Received : *7/8/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/8/97*	*CCP*	

Sample ID : *"Outfall, 7/09/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/9/97*
Sample Time : *2:56pm*

Date Received : *7/9/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/9/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972330***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/10/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/10/97*
Sample Time : *2:17pm*

Date Received : *7/10/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/10/97	CCP	

Sample ID : ***"Outfall, 7/11/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/11/97*
Sample Time : *2:55pm*

Date Received : *7/11/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/11/97	CCP	

Sample ID : ***"Outfall, 7/12/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/12/97*
Sample Time : *3:34pm*

Date Received : *7/12/97*
Sample Type : *aqueous*
KAR Sample No. : *972330-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/12/97	SNH	

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LABORATORY REPORT

KAR Project No. : ***972330***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/13/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***7/13/97***
Sample Time : ***1:40pm***

Date Received : ***7/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972330-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/13/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***972420***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/28/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/14/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/14/97*
Sample Time : *2:26pm*

Date Received : *7/14/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/14/97	CCP	

Sample ID : ***"Outfall, 7/15/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/15/97*
Sample Time : *12:48pm*

Date Received : *7/15/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/15/97	CCP	

Sample ID : ***"Outfall, 7/16/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/16/97*
Sample Time : *3:24pm*

Date Received : *7/16/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	7/16/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***972420***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/28/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/17/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/17/97*
Sample Time : *4:16pm*

Date Received : *7/17/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*7/17/97*	*CCP*	

Sample ID : ***"Outfall, 7/18/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/18/97*
Sample Time : *3:25pm*

Date Received : *7/18/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*7/18/97*	*CCP*	

Sample ID : ***"Outfall, 7/19/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *7/19/97*
Sample Time : *11:20am*

Date Received : *7/19/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*7/19/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***972420***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***07/28/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/20/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *7/20/97*
Sample Time : *11:25am*

Date Received : *7/20/97*
Sample Type : *aqueous*
KAR Sample No. : *972420-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*7/20/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***972523***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/04/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/21/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/21/97*
Sample Time : *3:02pm*

Date Received : *7/21/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/21/97	CCP	

Sample ID : ***"Outfall, 7/22/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/22/97*
Sample Time : *1:40pm*

Date Received : *7/22/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/22/97	RJC	

Sample ID : ***"Outfall, 7/23/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/23/97*
Sample Time : *2:17pm*

Date Received : *7/23/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/23/97	RJC	

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LABORATORY REPORT

KAR Project No. : 972523

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/04/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/24/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/24/97*
Sample Time : *2:10pm*

Date Received : *7/24/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/24/97	CCP	

Sample ID : ***"Outfall, 7/25/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/25/97*
Sample Time : *4:03pm*

Date Received : *7/25/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/25/97	CCP	

Sample ID : ***"Outfall, 7/26/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *7/26/97*
Sample Time : *9:45am*

Date Received : *7/26/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/26/97	GJE	

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LABORATORY REPORT

KAR Project No. : ***972523***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/04/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/27/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *7/27/97*
Sample Time : *10:50am*

Date Received : *7/27/97*
Sample Type : *aqueous*
KAR Sample No. : *972523-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/27/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***972607***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/11/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/28/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/28/97*
Sample Time : *3:12pm*

Date Received : *7/28/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/28/97	RJC	

Sample ID : ***"Outfall, 7/29/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/29/97*
Sample Time : *3:23pm*

Date Received : *7/29/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/29/97	CCP	

Sample ID : ***"Outfall, 7/30/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/30/97*
Sample Time : *3:19pm*

Date Received : *7/30/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	7/30/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***972607***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/11/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 7/31/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *7/31/97*
Sample Time : *3:40pm*

Date Received : *7/31/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*7/31/97*	*CCP*	

Sample ID : ***"Outfall, 8/01/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/1/97*
Sample Time : *11:45am*

Date Received : *8/1/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/1/97*	*CCP*	

Sample ID : ***"Outfall, 8/02/97"***

Sampled By : *PML of KAR Laboratories*
Sample Date : *8/2/97*
Sample Time : *11:38am*

Date Received : *8/2/97*
Sample Type : *aqueous*
KAR Sample No. : *972607-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/2/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***972607***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/11/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/03/97"***

Sampled By : ***PML of KAR Laboratories***
Sample Date : ***8/3/97***
Sample Time : ***10:38am***

Date Received : ***8/3/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972607-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*8/3/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***972696***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/18/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/04/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/4/97*
Sample Time : *4:28pm*

Date Received : *8/4/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/4/97*	*SNH*	

Sample ID : ***"Outfall, 8/05/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/5/97*
Sample Time : *3:52pm*

Date Received : *8/5/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/5/97*	*CCP*	

Sample ID : ***"Outfall, 8/06/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/6/97*
Sample Time : *3:37pm*

Date Received : *8/6/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/6/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972696***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/18/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/07/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/7/97*
Sample Time : *2:51pm*

Date Received : *8/7/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/7/97	CCP	

Sample ID : ***"Outfall, 8/08/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/8/97*
Sample Time : *3:54pm*

Date Received : *8/8/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/8/97	CCP	

Sample ID : ***"Outfall, 8/09/97"***

Sampled By : *CCP of KAR Laboratories*
Sample Date : *8/9/97*
Sample Time : *2:30pm*

Date Received : *8/9/97*
Sample Type : *aqueous*
KAR Sample No. : *972696-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/9/97	CCP	

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LABORATORY REPORT

KAR Project No. : 972696

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/18/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/10/97"***

Sampled By : ***CCP of KAR Laboratories***

Sample Date : ***8/10/97***

Sample Time : ***4:42pm***

Date Received : ***8/10/97***

Sample Type : ***aqueous***

KAR Sample No. : ***972696-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/10/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972810***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/25/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/11/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *8/11/97*
Sample Time : *4:48pm*

Date Received : *8/11/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/11/97	CCP	

Sample ID : ***"Outfall, 8/12/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/12/97*
Sample Time : *2:30pm*

Date Received : *8/12/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/12/97	CCP	

Sample ID : ***"Outfall, 8/13/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/13/97*
Sample Time : *2:57pm*

Date Received : *8/13/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/13/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***972810***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/25/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/14/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/14/97*
Sample Time : *2:18pm*

Date Received : *8/14/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/14/97*	*CCP*	

Sample ID : ***"Outfall, 8/15/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/15/97*
Sample Time : *2:59pm*

Date Received : *8/15/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/15/97*	*CCP*	

Sample ID : ***"Outfall, 8/16/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *8/16/97*
Sample Time : *11:30am*

Date Received : *8/16/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/16/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***972810***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***08/25/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/17/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *8/17/97*
Sample Time : *10:35am*

Date Received : *8/17/97*
Sample Type : *aqueous*
KAR Sample No. : *972810-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/17/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***972881***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/18/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/18/97*
Sample Time : *3:15pm*

Date Received : *8/18/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/18/97	CCP	

Sample ID : ***"Outfall, 8/19/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/19/97*
Sample Time : *3:25pm*

Date Received : *8/19/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/19/97	CCP	

Sample ID : ***"Outfall, 8/20/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/20/97*
Sample Time : *3:35pm*

Date Received : *8/20/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	8/20/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***972881***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/21/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/21/97*
Sample Time : *2:52pm*

Date Received : *8/21/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/21/97*	*CCP*	

Sample ID : ***"Outfall, 8/22/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *8/22/97*
Sample Time : *2:37pm*

Date Received : *8/22/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/22/97*	*CCP*	

Sample ID : ***"Outfall, 8/23/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *8/23/97*
Sample Time : *10:30am*

Date Received : *8/25/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*8/23/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***972881***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/24/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *8/24/97*
Sample Time : *12:15pm*

Date Received : *8/25/97*
Sample Type : *aqueous*
KAR Sample No. : *972881-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*8/24/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***972971***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/25/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *8/25/97*
Sample Time : *3:32pm*

Date Received : *8/25/97*
Sample Type : *aqueous*
KAR Sample No. : *972971-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*8/25/97*	*RJC*	

Sample ID : ***"Outfall, 8/26/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/26/97*
Sample Time : *4:05pm*

Date Received : *8/26/97*
Sample Type : *aqueous*
KAR Sample No. : *972971-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/26/97*	*CCP*	

Sample ID : ***"Outfall, 8/27/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *8/27/97*
Sample Time : *3:14pm*

Date Received : *8/27/97*
Sample Type : *aqueous*
KAR Sample No. : *972971-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/27/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***972971***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/28/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***8/28/97***
Sample Time : ***10:50am***

Date Received : ***8/28/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972971-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/28/97*	*CCP*	

Sample ID : ***"Outfall, 8/29/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***8/29/97***
Sample Time : ***10:40am***

Date Received : ***8/29/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972971-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/29/97*	*SNH*	

Sample ID : ***"Outfall, 8/30/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***8/30/97***
Sample Time : ***11:02am***

Date Received : ***8/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972971-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/30/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***972971***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/08/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 8/31/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***8/31/97***
Sample Time : ***4:32pm***

Date Received : ***8/31/97***
Sample Type : ***aqueous***
KAR Sample No. : ***972971-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*8/31/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***973060***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/01/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/1/97***
Sample Time : ***3:54pm***

Date Received : ***9/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/1/97*	*SNH*	

Sample ID : ***"Outfall, 9/02/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/2/97***
Sample Time : ***2:45pm***

Date Received : ***9/2/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/2/97*	*CCP*	

Sample ID : ***"Outfall, 9/03/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/3/97***
Sample Time : ***3:20pm***

Date Received : ***9/3/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/3/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***973060***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/04/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/4/97***
Sample Time : ***2:06pm***

Date Received : ***9/4/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/4/97*	*CCP*	

Sample ID : ***"Outfall, 9/05/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/5/97***
Sample Time : ***3:19pm***

Date Received : ***9/5/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/5/97*	*CCP*	

Sample ID : ***"Outfall, 9/06/97"***

Sampled By : ***CCP of KAR Laboratories***
Sample Date : ***9/6/97***
Sample Time : ***11:50am***

Date Received : ***9/6/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/6/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***973060***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/15/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/07/97"***

Sampled By : ***CCP of KAR Laboratories***
Sample Date : ***9/7/97***
Sample Time : ***11:20am***

Date Received : ***9/7/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973060-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/7/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : *973171*

Client: *Michigan Paperboard Corporation*

Date Reported : *09/18/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 9/08/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/8/97*
Sample Time : *3:00pm*

Date Received : *9/8/97*
Sample Type : *aqueous*
KAR Sample No. : *973171-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	9/8/97	RJC	

Sample ID : *"Outfall, 9/09/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/9/97*
Sample Time : *3:15pm*

Date Received : *9/9/97*
Sample Type : *aqueous*
KAR Sample No. : *973171-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/9/97	RJC	

Sample ID : *"Outfall, 9/10/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/10/97*
Sample Time : *3:12pm*

Date Received : *9/10/97*
Sample Type : *aqueous*
KAR Sample No. : *973171-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/10/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973171***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/18/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/11/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/11/97***
Sample Time : ***3:05pm***

Date Received : ***9/11/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973171-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/11/97	CCP	

Sample ID : ***"Outfall, 9/12/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/12/97***
Sample Time : ***2:29pm***

Date Received : ***9/12/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973171-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/12/97	CCP	

Sample ID : ***"Outfall, 9/13/97"***

Sampled By : ***PML of KAR Laboratories***
Sample Date : ***9/13/97***
Sample Time : ***11:00am***

Date Received : ***9/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973171-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/13/97	PML	

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LABORATORY REPORT

KAR Project No. : ***973171***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/18/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/14/97"***

Sampled By : ***PML of KAR Laboratories***
Sample Date : ***9/14/97***
Sample Time : ***11:35am***

Date Received : ***9/14/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973171-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/14/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***973263***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/26/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/15/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/15/97*
Sample Time : *3:28pm*

Date Received : *9/15/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	9/15/97	CCP	

Sample ID : ***"Outfall, 9/16/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/16/97*
Sample Time : *3:30pm*

Date Received : *9/16/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	9/16/97	CCP	

Sample ID : ***"Outfall, 9/17/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/17/97*
Sample Time : *2:22pm*

Date Received : *9/17/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	9/17/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973263***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/26/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/18/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/18/97*
Sample Time : *3:18pm*

Date Received : *9/18/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/18/97	SNH	

Sample ID : ***"Outfall, 9/19/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/19/97*
Sample Time : *3:34pm*

Date Received : *9/19/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	9/19/97	CCP	

Sample ID : ***"Outfall, 9/20/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *9/20/97*
Sample Time : *11:00am*

Date Received : *9/20/97*
Sample Type : *aqueous*
KAR Sample No. : *973263-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	SM(18) 4500-Cl I	9/20/97	GJE	

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LABORATORY REPORT

KAR Project No. : ***973263***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***09/26/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/21/97"***

Sampled By : ***GJE of KAR Laboratories***
Sample Date : ***9/21/97***
Sample Time : ***10:57am***

Date Received : ***9/21/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973263-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*SM(18) 4500-Cl I*	*9/21/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***973344***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/06/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/22/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/22/97*
Sample Time : *3:52pm*

Date Received : *9/22/97*
Sample Type : *aqueous*
KAR Sample No. : *973344-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/22/97*	*RJC*	

Sample ID : ***"Outfall, 9/23/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/23/97*
Sample Time : *3:00pm*

Date Received : *9/23/97*
Sample Type : *aqueous*
KAR Sample No. : *973344-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/23/97*	*RJC*	

Sample ID : ***"Outfall, 9/24/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *9/24/97*
Sample Time : *5:14pm*

Date Received : *9/24/97*
Sample Type : *aqueous*
KAR Sample No. : *973344-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/24/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***973344***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/06/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/25/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/25/97***
Sample Time : ***11:04am***

Date Received : ***9/25/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973344-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/25/97*	*CCP*	

Sample ID : ***"Outfall, 9/26/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/26/97***
Sample Time : ***11:00am***

Date Received : ***9/26/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973344-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/26/97*	*CCP*	

Sample ID : ***"Outfall, 9/27/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/27/97***
Sample Time : ***11:34am***

Date Received : ***9/27/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973344-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/27/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***973344***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/06/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/28/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/28/97***
Sample Time : ***11:32am***

Date Received : ***9/28/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973344-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/28/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***973474***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/09/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 9/29/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/29/97***
Sample Time : ***1:26pm***

Date Received : ***9/29/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973474-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/29/97*	*CCP*	

Sample ID : ***"Outfall, 9/30/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***9/30/97***
Sample Time : ***2:52pm***

Date Received : ***9/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973474-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*9/30/97*	*CCP*	

Sample ID : ***"Outfall, 10/01/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***10/1/97***
Sample Time : ***1:55pm***

Date Received : ***10/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973474-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/1/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : *973474*

Client: *Michigan Paperboard Corporation*

Date Reported : *10/09/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 10/02/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/2/97*
Sample Time : *2:02pm*

Date Received : *10/2/97*
Sample Type : *aqueous*
KAR Sample No. : *973474-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/2/97	CCP	

Sample ID : *"Outfall, 10/03/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/3/97*
Sample Time : *3:10pm*

Date Received : *10/3/97*
Sample Type : *aqueous*
KAR Sample No. : *973474-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/3/97	CCP	

Sample ID : *"Outfall, 10/04/97"*

Sampled By : *CCP of KAR Laboratories*
Sample Date : *10/4/97*
Sample Time : *4:50pm*

Date Received : *10/4/97*
Sample Type : *aqueous*
KAR Sample No. : *973474-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/4/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973474***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/09/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/05/97"***

Sampled By : ***CCP of KAR Laboratories***
Sample Date : ***10/5/97***
Sample Time : ***9:30am***

Date Received : ***10/5/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973474-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/5/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***973548***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/20/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/06/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/6/97*
Sample Time : *3:07pm*

Date Received : *10/6/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/6/97	CCP	

Sample ID : ***"Outfall, 10/07/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/7/97*
Sample Time : *2:22pm*

Date Received : *10/7/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/7/97	CCP	

Sample ID : ***"Outfall, 10/08/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/8/97*
Sample Time : *2:24pm*

Date Received : *10/8/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/8/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973548***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/20/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/09/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/9/97*
Sample Time : *3:24pm*

Date Received : *10/9/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/9/97	CCP	

Sample ID : ***"Outfall, 10/10/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/10/97*
Sample Time : *3:14pm*

Date Received : *10/10/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/10/97	CCP	

Sample ID : ***"Outfall, 10/11/97"***

Sampled By : *RC of KAR Laboratories*
Sample Date : *10/11/97*
Sample Time : *10:00am*

Date Received : *10/11/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/11/97	RJC	

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LABORATORY REPORT

KAR Project No. : ***973548***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/20/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/12/97"***

Sampled By : *RC of KAR Laboratories*
Sample Date : *10/12/97*
Sample Time : *12:00pm*

Date Received : *10/12/97*
Sample Type : *aqueous*
KAR Sample No. : *973548-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/12/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***973664***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/27/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/13/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***10/13/97***
Sample Time : ***3:34pm***

Date Received : ***10/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973664-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/13/97	CCP	

Sample ID : ***"Outfall, 10/14/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***10/14/97***
Sample Time : ***3:00pm***

Date Received : ***10/14/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973664-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/14/97	CCP	

Sample ID : ***"Outfall, 10/15/97"***

Sampled By : ***RJC of KAR Laboratories***
Sample Date : ***10/15/97***
Sample Time : ***2:30pm***

Date Received : ***10/15/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973664-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/15/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973664***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/27/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/16/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/16/97*
Sample Time : *3:50pm*

Date Received : *10/16/97*
Sample Type : *aqueous*
KAR Sample No. : *973664-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/16/97	CCP	

Sample ID : ***"Outfall, 10/17/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/17/97*
Sample Time : *2:54pm*

Date Received : *10/17/97*
Sample Type : *aqueous*
KAR Sample No. : *973664-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/17/97	CCP	

Sample ID : ***"Outfall, 10/18/97"***

Sampled By : *PML of Kar Laboratories*
Sample Date : *10/18/97*
Sample Time : *9:27am*

Date Received : *10/18/97*
Sample Type : *aqueous*
KAR Sample No. : *973664-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/18/97	PML	

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LABORATORY REPORT

KAR Project No. : ***973664***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***10/27/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/19/97"***

Sampled By : ***PML of Kar Laboratories***
Sample Date : ***10/19/97***
Sample Time : ***2:15pm***

Date Received : ***10/19/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973664-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/19/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***973753***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/03/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/20/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/20/97*
Sample Time : *2:20pm*

Date Received : *10/20/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/20/97*	*CCP*	

Sample ID : ***"Outfall, 10/21/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/21/97*
Sample Time : *3:15pm*

Date Received : *10/22/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/21/97*	*CCP*	

Sample ID : ***"Outfall, 10/22/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/22/97*
Sample Time : *3:28pm*

Date Received : *10/23/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/22/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : *973753*

Client: *Michigan Paperboard Corporation*

Date Reported : *11/03/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 10/23/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/23/97*
Sample Time : *3:40pm*

Date Received : *10/23/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/23/97	CCP	

Sample ID : *"Outfall, 10/24/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/24/97*
Sample Time : *2:50pm*

Date Received : *10/24/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/24/97	CCP	

Sample ID : *"Outfall, 10/25/97"*

Sampled By : *GJE of KAR Laboratories*
Sample Date : *10/25/97*
Sample Time : *11:06am*

Date Received : *10/25/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	10/25/97	GJE	

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LABORATORY REPORT

KAR Project No. : ***973753***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/03/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/26/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *10/26/97*
Sample Time : *11:07am*

Date Received : *10/26/97*
Sample Type : *aqueous*
KAR Sample No. : *973753-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/26/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : *973860*

Client: *Michigan Paperboard Corporation*

Date Reported : *11/10/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 10/27/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/27/97*
Sample Time : *12:04pm*

Date Received : *10/27/97*
Sample Type : *aqueous*
KAR Sample No. : *973860-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/27/97	CCP	

Sample ID : *"Outfall, 10/28/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *10/28/97*
Sample Time : *2:40pm*

Date Received : *10/28/97*
Sample Type : *aqueous*
KAR Sample No. : *973860-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/28/97	CCP	

Sample ID : *"Outfall, 10/29/97"*

Sampled By : *RC of KAR Laboratories*
Sample Date : *10/29/97*
Sample Time : *2:30pm*

Date Received : *10/29/97*
Sample Type : *aqueous*
KAR Sample No. : *973860-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	10/29/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973860***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/10/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 10/30/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***10/30/97***
Sample Time : ***3:44pm***

Date Received : ***10/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973860-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*10/30/97*	*SNH*	

Sample ID : ***"Outfall, 10/31/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***10/31/97***
Sample Time : ***4:55pm***

Date Received : ***10/31/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973860-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330 1*	*10/31/97*	*SNH*	

Sample ID : ***"Outfall, 11/01/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/1/97***
Sample Time : ***2:48pm***

Date Received : ***11/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***973860-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/1/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : *973860*

Client: *Michigan Paperboard Corporation*

Date Reported : *11/10/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 11/02/97"*

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/2/97*
Sample Time : *11:58am*

Date Received : *11/2/97*
Sample Type : *aqueous*
KAR Sample No. : *973860-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/2/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***973932***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/13/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/03/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/3/97*
Sample Time : *2:42pm*

Date Received : *11/3/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-01*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/3/97	CCP	

Sample ID : ***"Outfall, 11/04/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/4/97*
Sample Time : *2:35pm*

Date Received : *11/4/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-02*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/4/97	RJC	

Sample ID : ***"Outfall, 11/05/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/5/97*
Sample Time : *3:40pm*

Date Received : *11/5/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-03*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/5/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973932***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/13/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/06/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/6/97*
Sample Time : *2:33pm*

Date Received : *11/6/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/6/97	RJC	

Sample ID : ***"Outfall, 11/07/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/7/97*
Sample Time : *3:00pm*

Date Received : *11/7/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/7/97	RJC	

Sample ID : ***"Outfall, 11/08/97"***

Sampled By : *CP of KAR Laboratories*
Sample Date : *11/8/97*
Sample Time : *11:15am*

Date Received : *11/8/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/8/97	CCP	

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LABORATORY REPORT

KAR Project No. : ***973932***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/13/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/09/97"***

Sampled By : *CP of KAR Laboratories*
Sample Date : *11/9/97*
Sample Time : *8:00pm*

Date Received : *11/9/97*
Sample Type : *aqueous*
KAR Sample No. : *973932-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/9/97*	*CCP*	

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LABORATORY REPORT

KAR Project No. : ***974067***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/10/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/10/97***
Sample Time : ***3:26pm***

Date Received : ***11/11/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974067-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*11/10/97*	*RJC*	

Sample ID : ***"Outfall, 11/11/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/11/97***
Sample Time : ***10:20am***

Date Received : ***11/11/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974067-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*11/11/97*	*RJC*	

Sample ID : ***"Outfall, 11/12/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/12/97***
Sample Time : ***12:27pm***

Date Received : ***11/12/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974067-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0 02*	*mg/L*	*EPA 330 1*	*11/12/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974067***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***11/21/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/13/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/13/97*
Sample Time : *2:24pm*

Date Received : *11/13/97*
Sample Type : *aqueous*
KAR Sample No. : *974067-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/13/97	RJC	

Sample ID : ***"Outfall, 11/14/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *11/14/97*
Sample Time : *3:26pm*

Date Received : *11/14/97*
Sample Type : *aqueous*
KAR Sample No. : *974067-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/14/97	RJC	

Sample ID : ***"Outfall, 11/15/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *11/15/97*
Sample Time : *12:30pm*

Date Received : *11/15/97*
Sample Type : *aqueous*
KAR Sample No. : *974067-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	11/15/97	RJC	

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LABORATORY REPORT

KAR Project No. : *974067*

Client: *Michigan Paperboard Corporation*

Date Reported : *11/21/97*

Project Description : *Sampling and analysis of outfall discharge.*

Sample ID : *"Outfall, 11/16/97"*

Sampled By : *RJC of KAR Laboratories*
Sample Date : *11/16/97*
Sample Time : *11:45am*

Date Received : *11/16/97*
Sample Type : *aqueous*
KAR Sample No. : *974067-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330 1*	*11/16/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974153***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/17/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/17/97***
Sample Time : ***3:24pm***

Date Received : ***11/17/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/17/97	RJC	

Sample ID : ***"Outfall, 11/18/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/18/97***
Sample Time : ***2:50pm***

Date Received : ***11/18/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/18/97	CCP	

Sample ID : ***"Outfall, 11/19/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/19/97***
Sample Time : ***4:30pm***

Date Received : ***11/19/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/19/97	RJC	

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LABORATORY REPORT

KAR Project No. : ***974153***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/20/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/20/97***
Sample Time : ***4:12pm***

Date Received : ***11/20/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/20/97	CCP	

Sample ID : ***"Outfall, 11/21/97"***

Sampled By : ***PL of KAR Laboratories***
Sample Date : ***11/21/97***
Sample Time : ***2:55pm***

Date Received : ***11/21/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/21/97	RJC	

Sample ID : ***"Outfall, 11/22/97"***

Sampled By : ***PL of Michigan Paperboard***
Sample Date : ***11/22/97***
Sample Time : ***2:23pm***

Date Received : ***11/22/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0 02	mg/L	EPA 330 1	11/22/97	PML	

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LABORATORY REPORT

KAR Project No. : ***974153***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/02/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/23/97"***

Sampled By : ***PL of Michigan Paperboard***
Sample Date : ***11/23/97***
Sample Time : ***2:35pm***

Date Received : ***11/23/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974153-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/23/97*	*PML*	

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LABORATORY REPORT

KAR Project No. : ***974248***
Date Reported : ***12/05/97***

Client: ***Michigan Paperboard Corporation***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/24/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/24/97***
Sample Time : ***3:30pm***
Date Received : ***11/24/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/24/97*	*RJC*	

Sample ID : ***"Outfall, 11/25/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/25/97***
Sample Time : ***2:52pm***
Date Received : ***11/25/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/25/97*	*RJC*	

Sample ID : ***"Outfall, 11/26/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/26/97***
Sample Time : ***2:08pm***
Date Received : ***11/26/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/26/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974248***
Date Reported : ***12/05/97***

Client: ***Michigan Paperboard Corporation***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 11/28/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/28/97***
Sample Time : ***2:25pm***
Date Received : ***11/28/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/28/97*	*SNH*	

Sample ID : ***"Outfall, 11/29/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/29/97***
Sample Time : ***3:20pm***
Date Received : ***11/29/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/29/97*	*SNH*	

Sample ID : ***"Outfall, 11/30/97"***
Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***11/30/97***
Sample Time : ***3:20pm***
Date Received : ***11/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974248-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*11/30/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***974296***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/10/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/01/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/1/97***
Sample Time : ***3:16pm***

Date Received : ***12/1/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974296-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/1/97*	*RJC*	

Sample ID : ***"Outfall, 12/02/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/2/97***
Sample Time : ***4:14pm***

Date Received : ***12/2/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974296-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/2/97*	*RJC*	

Sample ID : ***"Outfall, 12/03/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/3/97***
Sample Time : ***3:16pm***

Date Received : ***12/3/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974296-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/3/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974296***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/10/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/04/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *12/4/97*
Sample Time : *2:25pm*

Date Received : *12/4/97*
Sample Type : *aqueous*
KAR Sample No. : *974296-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/4/97*	*RJC*	

Sample ID : ***"Outfall, 12/05/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *12/5/97*
Sample Time : *2:53pm*

Date Received : *12/5/97*
Sample Type : *aqueous*
KAR Sample No. : *974296-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/5/97*	*PML*	

Sample ID : ***"Outfall, 12/06/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *12/6/97*
Sample Time : *10:40am*

Date Received : *12/6/97*
Sample Type : *aqueous*
KAR Sample No. : *974296-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/6/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***974296***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/10/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/07/97"***

Sampled By : *GJE of KAR Laboratories*
Sample Date : *12/7/97*
Sample Time : *10:16am*

Date Received : *12/7/97*
Sample Type : *aqueous*
KAR Sample No. : *974296-07*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/7/97*	*GJE*	

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LABORATORY REPORT

KAR Project No. : ***974418***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/08/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/8/97***
Sample Time : ***3:34pm***

Date Received : ***12/8/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/8/97*	*RJC*	

Sample ID : ***"Outfall, 12/09/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/9/97***
Sample Time : ***3:55pm***

Date Received : ***12/9/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/9/97*	*RJC*	

Sample ID : ***"Outfall, 12/10/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/10/97***
Sample Time : ***3:25pm***

Date Received : ***12/10/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/10/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974418***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/11/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/11/97***
Sample Time : ***3:46pm***

Date Received : ***12/11/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/11/97	RJC	

Sample ID : ***"Outfall, 12/12/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/12/97***
Sample Time : ***3:40pm***

Date Received : ***12/12/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/12/97	RJC	

Sample ID : ***"Outfall, 12/13/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/13/97***
Sample Time : ***3:30pm***

Date Received : ***12/13/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-06***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/13/97	RJC	

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LABORATORY REPORT

KAR Project No. : ***974418***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/19/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/14/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/14/97***
Sample Time : ***10:58am***

Date Received : ***12/14/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974418-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/14/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974496***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/22/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/15/97"***

Sampled By : ***RJC of KAR laboratories***
Sample Date : ***12/15/97***
Sample Time : ***2:15pm***

Date Received : ***12/15/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974496-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/15/97*	*RJC*	

Sample ID : ***"Outfall, 12/16/97"***

Sampled By : ***PML of KAR Laboratories***
Sample Date : ***12/16/97***
Sample Time : ***2:58pm***

Date Received : ***12/16/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974496-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/16/97*	*RJC*	

Sample ID : ***"Outfall, 12/17/97"***

Sampled By : ***RJC of KAR Laboratories***
Sample Date : ***12/17/97***
Sample Time : ***2:55pm***

Date Received : ***12/17/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974496-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/17/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974496***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/22/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/18/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *12/18/97*
Sample Time : *3:46pm*

Date Received : *12/18/97*
Sample Type : *aqueous*
KAR Sample No. : *974496-04*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/18/97	RJC	

Sample ID : ***"Outfall, 12/19/97"***

Sampled By : *SNH of KAR Laboratories*
Sample Date : *12/19/97*
Sample Time : *3:25pm*

Date Received : *12/19/97*
Sample Type : *aqueous*
KAR Sample No. : *974496-05*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/19/97	RJC	

Sample ID : ***"Outfall, 12/20/97"***

Sampled By : *RJC of KAR Laboratories*
Sample Date : *12/20/97*
Sample Time : *10:10am*

Date Received : *12/20/97*
Sample Type : *aqueous*
KAR Sample No. : *974496-06*

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	<0.02	mg/L	EPA 330.1	12/20/97	RJC	

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LABORATORY REPORT

KAR Project No. : ***974496***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***12/22/97***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/21/97"***

Sampled By : ***RJC of KAR Laboratories***
Sample Date : ***12/21/97***
Sample Time : ***1:20pm***

Date Received : ***12/21/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974496-07***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/21/97*	*RJC*	

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LABORATORY REPORT

KAR Project No. : ***974578***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***01/06/98***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/22/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/22/97***
Sample Time : ***2:58pm***

Date Received : ***12/22/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974578-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/22/97*	*RJC*	

Sample ID : ***"Outfall, 12/23/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/23/97***
Sample Time : ***2:15pm***

Date Received : ***12/23/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974578-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/23/97*	*RJC*	

Sample ID : ***"Outfall, 12/26/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/26/97***
Sample Time : ***1:45pm***

Date Received : ***12/26/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974578-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/26/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***974578***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***01/06/98***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/27/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/27/97***
Sample Time : ***10:00am***

Date Received : ***12/27/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974578-04***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/27/97*	*SNH*	

Sample ID : ***"Outfall, 12/28/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/28/97***
Sample Time : ***1:50pm***

Date Received : ***12/28/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974578-05***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/28/97*	*SNH*	

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LABORATORY REPORT

KAR Project No. : ***974630***

Client: ***Michigan Paperboard Corporation***

Date Reported : ***01/12/98***

Project Description : ***Sampling and analysis of outfall discharge.***

Sample ID : ***"Outfall, 12/29/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/29/97***
Sample Time : ***2:06pm***

Date Received : ***12/29/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974630-01***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/29/97*	*RJC*	

Sample ID : ***"Outfall, 12/30/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/30/97***
Sample Time : ***1:10pm***

Date Received : ***12/30/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974630-02***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/30/97*	*RJC*	

Sample ID : ***"Outfall, 12/31/97"***

Sampled By : ***SNH of KAR Laboratories***
Sample Date : ***12/31/97***
Sample Time : ***2:20pm***

Date Received : ***12/31/97***
Sample Type : ***aqueous***
KAR Sample No. : ***974630-03***

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Chlorine residual	*<0.02*	*mg/L*	*EPA 330.1*	*12/31/97*	*RJC*	

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