COMMERCIAL-SCALE DEMONSTRATION OF THE LIQUID PHASE METHANOL (LPMEOH™) PROCESS

ENVIRONMENTAL MONITORING REPORT NO. 8

For The Period

1 January - 31 March 1999

Prepared by

Air Products and Chemicals, Inc.
Allentown, Pennsylvania

and

Eastman Chemical Company
Kingsport, Tennessee

for the
Air Products Liquid Phase Conversion Company, L.P.

Prepared for the United States Department of Energy
National Energy Technology Laboratory
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ACRONYMS AND DEFINITIONS

Acurex	-	Acurex Environmental Corporation (now ARCADIS, Geraghty & Miller)
Air Products	-	Air Products and Chemicals, Inc.
AFDU	-	Alternative Fuels Development Unit - The "LaPorte PDU"
Balanced Gas	-	A syngas with a composition of hydrogen (H_2), carbon monoxide (CO), and carbon dioxide (CO_2) in stoichiometric balance for the production of methanol
BOD	-	Biochemical Oxygen Demand
Carbon Monoxide Gas	-	A syngas containing primarily carbon monoxide (CO); also called CO Gas
Crude Grade Methanol	-	Underflow from rectifier column (29C-20), defined as 80 wt% minimum purity; requires further distillation in existing Eastman equipment prior to use
DME	-	dimethyl ether
DOE	-	United States Department of Energy
DOE-NETL	-	The DOE's National Energy Technology Laboratory (Project Team)
DOE-HQ	-	The DOE's Headquarters - Coal Fuels and Industrial Systems (Project Team)
DTP	-	Demonstration Test Plan - The four-year Operating Plan for Phase 3, Task 2 Operation
DVT	-	Design Verification Testing
Eastman	-	Eastman Chemical Company
EIV	-	Environmental Information Volume
EMP	-	Environmental Monitoring Plan
EMR	-	Environmental Monitoring Report
EPRI	-	Electric Power Research Institute
HAPs	-	Hazardous Air Pollutants
Hydrogen Gas	-	A syngas containing an excess of hydrogen (H_2) over the stoichiometric balance for the production of methanol; also called H_2 Gas
IGCC	-	Integrated Gasification Combined Cycle, a type of electric power generation plant
IGCC/OTM	-	An IGCC plant with a "Once-Thru Methanol" plant (the LPMEOH™ Process) added-on
KSCF	-	Thousand Standard Cubic Feet
KSCFH	-	Thousand Standard Cubic Feet per Hour
LaPorte PDU	-	The DOE-owned experimental unit (PDU) located adjacent to Air Products' industrial gas facility at LaPorte, Texas, where the LPMEOH™ process was successfully piloted
LDAR	-	Leak Detection and Repair
LPDME	-	Liquid Phase DME process, for the production of DME as a mixed coproduct with methanol
LPMEOH™	-	Liquid Phase Methanol (the technology to be demonstrated)
Main Plant Purge	-	Unreacted synthesis gas stream from LPMEOH™ process returned to Eastman's fuel gas header
mg/m^3	-	Milligrams per cubic meter
NEPA	-	National Environmental Policy Act
NPDES	-	National Pollutant Discharge Elimination System
OSHA	-	Occupational Safety and Health Administration
Partnership	-	Air Products Liquid Phase Conversion Company, L.P.
PDU	-	Process Development Unit
PFD	-	Process Flow Diagram(s)
ppbv	-	parts per billion (volume basis)
Project	-	Production of Methanol/DME Using the LPMEOH™ Process at an Integrated Coal Gasification Facility
psia	-	Pounds per Square Inch (Absolute)
psig	-	Pounds per Square Inch (gauge)
P&ID	-	Piping and Instrumentation Diagram(s)
RCRA	-	Resource and Conservation Recovery Act
Refined Grade Methanol	-	Distilled methanol, defined as 99.8wt% minimum purity; used directly in downstream Eastman processes
SCFH	-	Standard Cubic Feet per Hour
Sl/hr-kg	-	Standard Liter(s) per Hour per Kilogram of Catalyst

ACRONYMS AND DEFINITIONS (cont'd)

Syngas	-	Abbreviation for Synthesis Gas
Synthesis Gas	-	A gas containing primarily hydrogen (H_2) and carbon monoxide (CO), or mixtures of H_2 and CO; intended for "synthesis" in a reactor to form methanol and/or other hydrocarbons (synthesis gas may also contain CO_2, water, and other gases)
Tie-in(s)	-	the interconnection(s) between the LPMEOH™ Process Demonstration Facility and the Eastman Facility
TOC	-	Total Organic Carbon
TLV	-	Threshold Limit Value
TPD	-	Ton(s) per Day
WBS	-	Work Breakdown Structure
wt	-	Weight

1. Introduction

The Liquid Phase Methanol (LPMEOH™) Demonstration Project at Kingsport, Tennessee, is a $213.7 million effort being conducted under a cooperative agreement between the U.S. Department of Energy (DOE) and Air Products Liquid Phase Conversion Company, L.P. (the Partnership). Air Products and Chemicals, Inc. (Air Products) and Eastman Chemical Company (Eastman) formed the Partnership to execute the Demonstration Project. A demonstration unit producing 80,000 gallons per day (260 tons-per-day (TPD)) of methanol from coal-derived synthesis gas (syngas) was designed, constructed, and began a four-year operational period in April of 1997 at a site located at the Eastman complex in Kingsport. The Partnership will own and operate the facility for the four-year demonstration period.

This project is sponsored under the DOE's Clean Coal Technology Program, and its primary objective is to "demonstrate the production of methanol using the LPMEOH™ Process in conjunction with an integrated coal gasification facility." The project will also demonstrate the suitability of the methanol produced for use as a chemical feedstock or as a low-sulfur dioxide, low-nitrogen oxides alternative fuel in stationary and transportation applications. The project may also demonstrate the production of dimethyl ether (DME) as a mixed coproduct with methanol, if laboratory- and pilot-scale research and market verification studies show promising results. If implemented, the DME would be produced during the last six months of the four-year demonstration period.

The LPMEOH™ process is the product of a cooperative development effort by Air Products and the DOE in a program that started in 1981. It was successfully piloted at a 10-TPD rate in the DOE-owned experimental unit at Air Products' LaPorte, Texas, site. This Demonstration Project is the culmination of that extensive cooperative development effort.

2. Project Description

The demonstration unit, which occupies an area of 0.6 acre, is integrated into the existing 4,000-acre Eastman complex located in Kingsport, Tennessee. The Eastman complex employs approximately 10,000 people. In 1983, Eastman constructed a coal gasification facility utilizing Texaco technology. The syngas generated by this gasification facility is used to produce carbon monoxide and methanol. Both of these products are used to produce methyl acetate and ultimately cellulose acetate and acetic acid. The availability of this highly reliable coal gasification facility was the major factor in selecting this location for the LPMEOH™ Process Demonstration. Three different feed gas streams (hydrogen gas or H_2 Gas, carbon monoxide gas or CO Gas, and Balanced Gas) are available from existing operations to the LPMEOH™ Demonstration Unit, thus providing the range of syngas ratios (hydrogen to carbon monoxide) needed to meet the technical objectives of the Demonstration Project.

For descriptive purposes and for design and construction scheduling, the project has been divided into four major process areas with their associated equipment:

- *Reaction Area* - Syngas preparation and methanol synthesis reaction equipment.
- *Purification Area* - Product separation and purification equipment.
- *Catalyst Preparation Area* - Catalyst and slurry preparation and disposal equipment.
- *Storage/Utility Area* - Methanol product, slurry, and oil storage equipment.

The physical appearance of this facility closely resembles the adjacent Eastman process plants, including process equipment in steel structures.

- *Reaction Area*

The reaction area includes feed gas compressors, catalyst guard beds, the reactor, a steam drum, separators, heat exchangers, and pumps. The equipment is supported by a matrix of structural steel. The most salient feature is the reactor, since with supports, it is approximately 84-feet tall.

- *Purification Area*

The purification area features two distillation columns with supports; one is approximately 82-feet tall, and the other 97-feet tall. These vessels resemble the columns of the surrounding process areas. In addition to the columns, this area includes the associated reboilers, condensers, air coolers, separators, and pumps.

- *Catalyst Preparation Area*

The catalyst preparation area consists of a building with a roof and partial walls, in which the catalyst preparation vessels, slurry handling equipment, and spent slurry disposal equipment are housed. In addition, a hot oil utility system is included in the area.

- *Storage/Utility Area*

The storage/utility area includes two diked lot-tanks for methanol, two tanks for oil storage, a slurry holdup tank, a trailer loading/unloading area, and an underground oil/water separator. A vent stack for safety relief devices is located in this area.

3. Process Description

The LPMEOH™ Demonstration Unit is integrated with Eastman's coal gasification facility. A simplified process flow diagram is included in Appendix A. Syngas is introduced into the slurry reactor, which contains a slurry of liquid mineral oil with suspended solid particles of catalyst. The syngas dissolves through the mineral oil, contacts the catalyst, and reacts to form methanol. The heat of reaction is absorbed by the slurry and is removed from the slurry by steam coils. The methanol vapor leaves the reactor, is condensed to a liquid, sent to the distillation columns for removal of higher alcohols, water, and other impurities, and is then stored in the day tanks for sampling before being sent to Eastman's methanol storage. Most of the unreacted syngas is recycled back to the reactor with the syngas recycle

compressor, improving cycle efficiency. The methanol will be used for downstream feedstocks and in off-site fuel testing to determine its suitability as a transportation fuel and as a fuel for stationary applications in the power industry.

Demonstration Test Plan

Following the start-up of the LPMEOH™ Demonstration Unit, a four-year test plan is being performed by Air Products and Eastman. The goals of the Test Plan are structured to meet the commercialization objectives for the LPMEOH™ Process. Excerpts from Commercialization Objectives from the program Statement of Work are included here to provide the global perspective of the Demonstration Plan:

"Primary Objective

The primary objective of the Project is to demonstrate the commercial scale production of methanol using the LPMEOH™ Process...

The LPMEOH™ Process technology is expected to be commercialized as part of an IGCC electric power generation system. Therefore, the Project incorporates the commercially important aspects of the operation of the LPMEOH™ Process which would enhance IGCC power generation. These important aspects of LPMEOH™ Process integrations are:

- The coproduction of electric power and of high value liquid transportation fuels and/or chemical feedstocks from coal. This coproduction requires that the partial conversion of synthesis gas to storable liquid products be demonstrated.

- Using an energy load following operating concept which allows conversion of off-peak energy, at attendant low value, into peak energy commanding a higher value. The load-following concept makes use of gasifier capacity that is under utilized during low-demand periods by using the LPMEOH™ Process to convert the excess synthesis gas to a storable liquid fuel for use in electric power generation during the peak energy periods. This operating concept requires that on/off and synthesis gas load following capabilities be demonstrated...

During operation, the instrumentation system will allow for the collection of engineering data, analysis and reporting which will be done by on-site technical personnel. Typical reporting will include on-stream factors, material and energy balances, reactor and equipment performance, comparison with laboratory and LaPorte Alternative Fuels Development Unit (AFDU) results, conversion efficiencies and catalyst activity...

Secondary Objective

A secondary objective of the Project is to demonstrate the production of DME (Dimethyl ether) as a mixed coproduct with methanol...

Subject to Design Verification Testing (DVT), the Partnership proposes to enhance the Project by including the demonstration of the slurry reactor's capability to produce DME as a mixed co-product with methanol...

DVT is required to address issues such as catalyst activity and stability and to provide data for engineering design and demonstration decision making...

At the conclusion of the DVT Steps, a joint Partnership/DOE decision will be made regarding continuation of the methanol/DME demonstration. Timing of the final decision must ensure that the necessary design, procurement, construction and commissioning can be completed to allow for (Phase 3, Task 2.2) operation at the end of the primary LPMEOH™ process demonstration period."

The full Demonstration Test Plan (issued September 1996) provides details in the strategy and conditions to be tested during the four-year operating period.

4. Environmental Monitoring Plan (EMP) Description

Air Products Liquid Phase Conversion Company, L.P., has constructed and is operating the 260 ton-per-day Liquid Phase Methanol (LPMEOH™) Demonstration Unit at the Eastman Chemical facility in Kingsport, Tennessee. As specified in the Cooperative Agreement, the Partnership developed an Environmental Monitoring Plan (EMP) (issued August 1996) which describes in detail the environmental monitoring activities to be performed during the operation of the LPMEOH™ Demonstration Unit. The purpose of the EMP is to: 1) document the extent of compliance monitoring activities, i.e., those activities required to meet permit requirements, 2) confirm the specific environmental impacts predicted in the National Environmental Policy Act documentation, and 3) establish an information base for the assessment of the environmental performance of the technology for future commercialization.

The EMP describes three categories of environmental monitoring which are performed as a result of the operation of the LPMEOH™ Demonstration Unit. Details of streams internal to the demonstration unit are available in the Technical Progress Reports for the Project.

4.1 Eastman Reporting of Publicly Available Technical Data

As defined in the Statement of Work for the Demonstration Project, Eastman will provide data on three areas of operation of the Chemicals-from-Coal complex (refer to Table 4.1 for a breakdown of the streams to be monitored):

1) Gasifier material balance data
2) 10C-30 Guard Bed operating data
3) Wastewater and alcohols to wastewater treatment system

This technical information provides information from Eastman's existing facilities to provide an overall assessment of the LPMEOH™ technology. A Special Topical Report will provide this information. Updates, if any, are included in Quarterly EMRs if a significant change occurs.

4.2 Compliance Monitoring

Four areas of compliance monitoring have been identified to satisfy the permit requirements for the demonstration unit (Table 4.2):

1) Combined Vapor Flow from Demonstration Unit to Boiler
2) Fugitive Emissions
3) Particulate Emissions
4) Wastewater Treatment System Outlet Stream

Each of these sources is monitored at a frequency mandated by the relevant permit or industrial hygiene practice. The EMRs will include the results of any compliance monitoring generated during the reporting period.

4.3 Supplemental Monitoring

Three areas of supplemental monitoring have been identified in the EMP (Table 4.3):

Summary of Major Material Balance Streams for Demonstration Unit

The major feed streams (CO Gas, H_2 Gas, Balanced Gas) and product flows (Refined Grade Methanol, Crude Grade Methanol, Main Plant Purge) are provided as a summary table of the cumulative stream flows for the reporting period.

Solid/Liquid Discharges

Four other streams can be generated from the demonstration unit:

1) Compressor and Pump Lubricants
2) Oil Recovered in Oil/Water Separator
3) Spent Catalyst
4) 29C-40 Guard Bed Adsorbent

Any quantities generated during the reporting period are included in the EMR.

Noise

The EMP identified that a noise survey around the 29K-01 Recycle Compressor was planned during the initial start-up of the demonstration unit.

TABLE 4.1

LPMEOH™ DEMONSTRATION UNIT

PUBLICLY AVAILABLE TECHNICAL DATA FROM EASTMAN CHEMICALS-FROM-COAL COMPLEX

Environmental Media	General Parameters
Coal	Pressure, Temperature, Coal Analysis
Oxygen to Gasifier	Pressure, Temperature, $\%O_2$
Water to Gasifier	Pressure, Temperature
Waste Water from Gasifier	Pressure, Temperature, Total Organic Carbon
Clean Synthesis Gas from Gasifier	Pressure, Temperature, Flow
Sulfur Recovered from Gasifier	Pressure, Temperature, Flow, %S
Carbon Dioxide from Gasifier	Pressure, Temperature, Flow, $\%CO_2$
Slag from Gasifier	Pressure, Temperature, Flow
Balanced Gas from 10C-30 Guard Bed	Pressure, Temperature, Flow, Composition
Wastewater and Alcohols to Wastewater Treatment System	Flow, Composition, BOD

TABLE 4.2

LPMEOH™ DEMONSTRATION UNIT

COMPLIANCE MONITORING

Environmental Media	General Parameters
Combined Vapor Flow from Demonstration Unit to Boiler	Composition
Fugitive Emissions	Leak Detection and Repair (LDAR) Report, Volatile Organic Carbon (VOC), Background Ambient CO Concentration
Particulate Emissions	Threshold Limit Value (TLV)
Wastewater Treatment System Outlet Stream	Flow, Total Organic Carbon, pH

TABLE 4.3

LPMEOH™ DEMONSTRATION UNIT

SUPPLEMENTAL MONITORING

Environmental Media	General Parameters
CO Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
H_2 Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Balanced Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Main Vapor Purge from LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Refined Grade Methanol	Cumulative Flow for Quarter
Crude Grade Methanol	Cumulative Flow for Quarter
Compressor and Pump Lubricants	Weight or Volume
Oil Recovered in Oil/Water Separator	Weight or Volume
Spent Catalyst	Weight, Weight% Solids
29C-40 Guard Bed Adsorbent	Weight or Volume
Noise Survey for 29K-01 Recycle Compressor	dBa

5. Project Summary

Synthesis gas was first introduced to the LPMEOH™ Demonstration Unit on 02 April 1997. The nameplate capacity of 80,000 gallons of methanol per day (260 tons-per-day) was achieved on 06 April 1997. During the reporting period, availability for the LPMEOH™ Demonstration Unit was 99%, and the plant underwent a successful inspection of pressure vessels per state code requirements. Table 5.1 summarizes the onstream time and outages of the LPMEOH™ Demonstration Unit during the reporting period.

6. Updates on Eastman "Chemicals-from Coal" Facility Publicly Available Technical Data

6.1 Gasifier Facility

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data from the Eastman "Chemicals-from-Coal" facility, which includes data on the streams associated with the Gasifier facility, will be issued in a Special Topical Report. If a significant change in gasifier facility operation (e.g., feedstock change, equipment modifications or additions, etc.) occurs, then an update will be provided in a future EMR.

6.2 10C-30 Catalyst Guard Bed

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data on the trace impurities entering and leaving the Catalyst Guard Bed will be issued in a Special Topical Report.

During the reporting period, there was no change of adsorbent or process change related to the operation of the 10C-30 Catalyst Guard Bed. If a significant change occurs, then an update will be provided in a future EMR.

6.3 Wastewater and Alcohols to Wastewater Treatment System

The report on publicly available technical data from the Eastman "Chemicals-from-Coal" facility, which includes data on the streams associated with the wastewater and alcohols to the Wastewater Treatment System, will be issued in a Special Topical Report. This will consist of a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOH™ Demonstration Unit.

Table 5.1

Summary of LPMEOH™ Demonstration Plant Onstream Time and Outages - January/March 1999

Operation Start	Operation End	Operating Hours	Shutdown Hours	Reason for Shutdown
1/1/99 00:00	1/5/99 15:10	111.2	2.8	Electrical Transient
1/5/99 17:55	1/21/99 02:00	368.1	17.5	Syngas Outage
1/21/99 19:30	2/22/99 10:20	758.8	16.8	Electrical Transient
2/23/99 03:10	3/2/99 07:00	171.8	296.6	Shutdown for Outage
3/14/99 15:35	3/31/99 23:59	416.4		
	Total Operating Hours		1826.3	
	Syngas Available Hours		1844.9	
	Plant Availability, %		**98.99**	

7. Compliance Monitoring

7.1 Combined Vapor Flow from Demonstration Unit to Boiler

A sample of the header gas from the LPMEOH™ Demonstration Unit must be analyzed as part of the Boiler and Industrial Furnace regulations within RCRA. Sampling is currently required every three years. During the development of the EMP, it was anticipated that the new tie-in from the LPMEOH™ Demonstration Unit to the Eastman fuel header would require testing as a new source. After the EMP was published, it was determined that the new tie-in was not considered a significant change and did not require testing. Therefore, with the current sampling schedule, the next sample will be taken in February of 2000.

No activity occurred during the reporting period.

7.2 Fugitive Emissions

7.2.1 Leak Detection and Repair (LDAR)

Appendix B contains the latest report on Leak Detection and Repair at the LPMEOH™ Demonstration Unit. All items (valves, pump seals, fittings) which were found to exceed the allowable leakage rate (as measured by concentration levels in air) were able to be repaired by Eastman.

7.2.2 Ambient Carbon Monoxide Background Concentration

This one-time study was completed in June of 1998, and documents the concentration of CO that is encountered by a LPMEOH™ operations person during the course of a normal day of plant operations. The report on this study is included in Environmental Monitoring Report No. 5. Both the time-weighted average and the peak values for CO were below the established limits by the Tennessee Operational Health and Safety Administration.

7.3 Particulate Emissions

This one-time study was completed in July of 1997, and documents the exposure level to particulate emissions that is encountered by a LPMEOH™ operations person during the catalyst charging process. The report on this study is included in Environmental Monitoring Report No. 1. Some engineering modifications to the catalyst loading system are planned to reduce the dust concentration and potential personnel exposure.

7.4 Wastewater Treatment System Outlet Stream

The reports on the outfall from the Wastewater Treatment System (Discharge Number 002) for the reporting period is attached in Appendix C. There were no permit excursions.

A process stream within the existing Eastman facility which is impacted by the operation of the LPMEOH™ Demonstration Unit contains the byproduct alcohols and water which are

generated in parallel with the production of methanol. This stream is sent to the Eastman Wastewater Treatment System. As noted in Section 6.3, a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOH™ Demonstration Unit will be included in a Special Topical Report on publicly available technical data from the Eastman "Chemicals-from-Coal" facility.

8. Supplemental Monitoring

8.1 Total Synthesis Gas Use and Methanol Production

Table 8.1 contains the summary of the major process flows to and from the LPMEOH™ Demonstration Unit for the reporting period. Approximately 3,890,000 gallons (12,836 tons) of methanol (Refined and Crude Grades) were produced during the reporting period.

8.2 Oil/Water Separator

A total of 12,000 pounds of oil was removed from the Oil/Water Separator during the reporting period. In addition, a total of 97,585 pounds of oil was recovered from other equipment within the existing Eastman complex. This material has been incinerated for energy recovery.

8.3 Compressor and Pump Lubricants

No material was generated during the reporting period.

8.4 Spent Catalyst Slurry

A total of 22,500 pounds of spent catalyst slurry was removed from the LPMEOH™ Reactor (drained into drums) during the reporting period. This material is presently stored on site, and arrangements are being made to ship this material to the off-site catalyst reclaimer.

8.5 29C-40 Catalyst Guard Bed Spent Adsorbent

No material was generated during the reporting period.

8.6 Noise

The results of noise dosimetry measurements of the entire LPMEOH™ Demonstration Unit were reported in Environmental Monitoring Report No. 1. The results of an area noise survey at each platform of the LPMEOH™ Demonstration Unit and around the 29K-01 Recycle Compressor were reported in Environmental Monitoring Report No. 2. No additional surveys were performed during the reporting period.

Table 8-1

Synthesis Gas Use and Methanol Production - January/March 1999
LPMEOH™ Demonstration Unit

	January 1999	February 1999	March 1999	Total
Consumption, KSCF				
Balanced Gas	453,516.0	347,506.0	235,462.0	1,036,484.0
CO Gas	80.4	0.0	88.0	168.4
H_2 Gas	0.0	0.0	0.0	0.0
Production, Tons				
Crude Methanol	2,050.0	1,531.0	853.1	4,434.1
Refined Methanol	3,787.1	2,857.0	1,757.7	8,401.8
Total Purge Gas, KSCF	65,723.5	47,530.1	57,418.4	170,672.0

9. Compliance

9.1 Compliance with Permit Limits

There were no excursions outside permit limits associated with the operation of the LPMEOH™ Demonstration Unit.

10. Problems and Recommendations

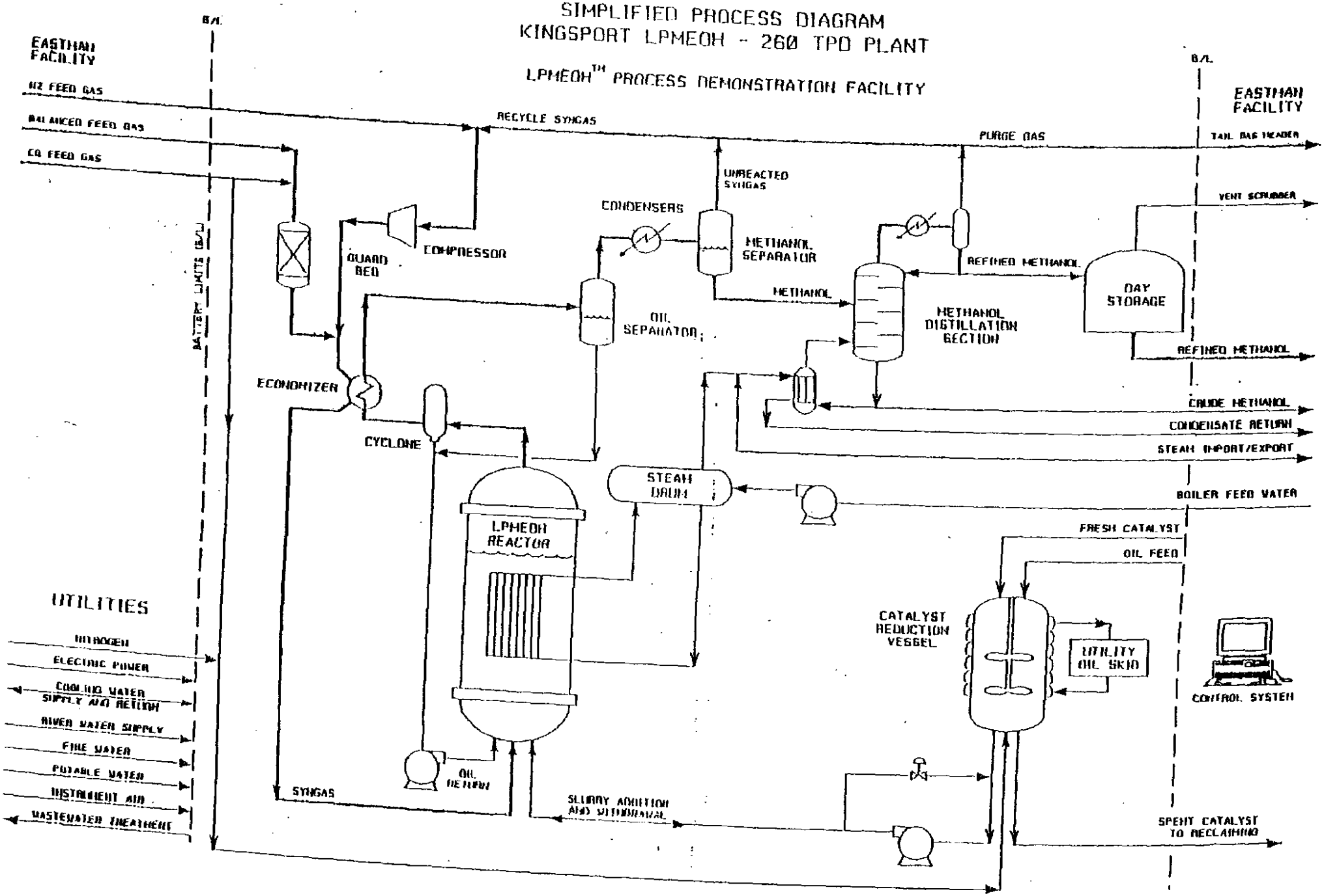
There have been no significant problems arising in the environmental area.

APPENDICES

APPENDIX A - SIMPLIFIED PROCESS FLOW DIAGRAM

SIMPLIFIED PROCESS DIAGRAM
KINGSPORT LPMEOH - 260 TPD PLANT

LPMEOH™ PROCESS DEMONSTRATION FACILITY



APPENDIX B - LEAK DETECTION AND REPAIR REPORT

40 CFR Part 63 SubPart H -- Semi-Annual Monitoring Summary
EASTMAN CHEMICAL
P.O. Box 511
Kingsport, TN 37662

'eriod: 07/01/1998 to 12/31/1998

'ROCESS UNIT: METHANOL 29 COMPONENT CLASS: VALVES

'ERIOD ;TART	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE
)1/01/1998	12/31/1998	242	1	0.41	0	0

PROCESS UNIT: METHANOL 29 COMPONENT CLASS: PUMPS

PERIOD START	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE
07/01/1998	07/31/1998	11	0	0.00	0	0
08/01/1998	08/31/1998	11	0	0.00	0	0
09/01/1998	09/30/1998	11	0	0.00	0	0
10/01/1998	10/31/1998	11	0	0.00	0	0
11/01/1998	11/30/1998	11	0	0.00	0	0
12/01/1998	12/31/1998	11	0	0.00	0	0

PROCESS UNIT: METHANOL 29 COMPONENT CLASS: COMPRESSORS

PERIOD START	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE
* * * No COMPRESSORSs IN CMPU * * *						

PROCESS UNIT: METHANOL 29 COMPONENT CLASS: AGITATORS

PERIOD START	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE

* * * No AGITATORSs IN CMPU * * *

PROCESS UNIT: METHANOL 29 COMPONENT CLASS: CONNECTORS

PERIOD START	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE

* * * NO DATA LOGGED FOR CONNECTORS * * *

End Of Report - (ver. 2.4)

40CFR Part 63 SubPart H - Semi Annual Delayed Repairs Report
EASTMAN CHEMICAL
P.O. Box 511
Kingsport, TN 37662

Period: 07/01/1998 to 12/31/1998

PROCESS UNIT: METHANOL 29

COMPONENT TAG	DRAWING NUMBER	COMPONENT CLASS	INSPECTION DATE
REASON FOR DELAYED REPAIR			

* * * No delayed repairs logged for period. * * *

End Of Report

40 CFR Part 63 SubPart H -- Semi-Annual Exempt Compressor Report
EASTMAN CHEMICAL
P.O. Box 511
Kingsport, TN 37662

Printed: 04/19/1999 at 08:24:37
Period: 07/01/1998 to 12/31/1998

PROCESS UNIT: METHANOL 29

INSPECTION DATE	DRAWING NUMBER	COMPONENT TAG	BACK-GROUND	TEST READING	NET READING	TEST RESULT

* * * No EXEMPT Compressors * * *

End Of Report

40 CFR Part 63 SubPart H -- Semi-Annual Pressure Relief Device Report
EASTMAN CHEMICAL
P.O. Box 511
Kingsport, TN 37662

Period: 07/01/1998 to 12/31/1998

PROCESS UNIT: METHANOL 29

INSPECTION DATE	DRAWING NUMBER	COMPONENT TAG	BACK-GROUND	TEST READING	NET READING	TEST RESULT

* * * No DATA LOGGED FOR Pressure Relief Devices * * *

End Of Report

40 CFR Part 63 SubPart H -- Semi-Annual Closed Vent System Report
EASTMAN CHEMICAL
P.O. Box 511
Kingsport, TN 37662

Period: 07/01/1998 to 12/31/1998

PROCESS UNIT: METHANOL 29

INSPECTION DATE	DRAWING NUMBER	COMPONENT TAG	BACK-GROUND	TEST READING	NET READING	TEST RESULT

* * * NO DATA LOGGED FOR CLOSED VENT SYSTEM * * *

End Of Report

APPENDIX C - NPDES REPORTS FOR WASTEWATER TREATMENT SYSTEM OUTLET STREAM

PERMITTEE NAME/ADDRESS:
TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 01 - 31

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE [__] **

FORM APPROVED
OMB No. 2040-0004

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) AVERAGE	Quantity or (54-61) MAXIMUM	Loading UNIT	(4 Card Only) (38-45) MINIMUM	Quantity or (46-53) AVERAGE	Concentration (54-61) MAXIMUM	UNIT	NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
PH	SAMPLE MEASUREMENT	********	********		6.9	********	7.9	(12)	0	Continuous	N/A
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	[illegible]	[illegible]	****	6.0 MINIMUM	[illegible]	9.0 MAXIMUM	SU		CONTINUOUS	RECORDER
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	4,129	6,724	(26)	********	********	********		0	3/7	Composite
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	10093 MON AVG	32687 DAILY MAX	LBS/DAY	********	********	********	****		3/7 WEEKLY	COMPOSITE
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	33	39	(26)	********	0.1	0.2	(19)	0	1/7	Composite
00610 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6664 MON AVG	13329 DAILY MAX	LBS/DAY	********	30.6 MON AVG	61.0 DAILY MAX	MG/L		1/7 WEEKLY	COMPOSITE
CYANIDE, TOTAL (AS CN)	SAMPLE MEASUREMENT	< 2.12	< 2.12	(26)	********	< 0.010	< 0.010	(19)	0	1/31	Grab
00720 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.93 MON AVG	21.85 DAILY MAX	LBS/DAY	********	0.048 MON AVG	0.343 DAILY MAX	MG/L		ONCE/MONTH	GRAB
CHROMIUM, TOTAL (AS CR)	SAMPLE MEASUREMENT	3.40	3.40	(26)	********	0.014	0.014	(19)	0	1/31	Composite
01034 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.93 MON AVG	21.85 DAILY MAX	LBS/DAY	********	0.050 MON AVG	0.100 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	6.64	6.64	(26)	********	0.027	0.027	(19)	0	1/31	Composite
01042 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.93 MON AVG	21.85 DAILY MAX	LBS/DAY	********	0.050 MON AVG	0.100 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
LEAD, TOTAL (AS PB)	SAMPLE MEASUREMENT	< 7.26	< 7.26	(26)	********	< 0.030	< 0.030	(19)	0	1/31	Composite
01051 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	32.68 MON AVG	150.77 DAILY MAX	LBS/DAY	********	0.172 MON AVG	0.690 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE
H. H. Holliman, President Tennessee Eastman Division	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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	(423) 229-2000	99 - 02 - 10
TYPED OR PRINTED			AREA CODE NUMBER	YEAR MO DAY

Forms by WindowChem(707)864-0845;p/n11090.v5 01,4/1/96

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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PERMITTEE NAME/ADDRESS:
TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 01 - 31

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE |__| **

FORM APPROVED
OMB No. 2040-0004

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) AVERAGE	Quantity or (54-61) MAXIMUM	Loading UNIT	(4 Card Only) (38-45) MINIMUM	Quantity or (46-53) AVERAGE	Concentration (54-61) MAXIMUM	UNIT	NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
NICKEL, TOTAL (AS NI)	SAMPLE MEASUREMENT	7.84	7.84	(26)	********	0.032	0.032	(19)	0	1/31	Composite
01067 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**369.28 MON AVG**	**869.66 DAILY MAX**	LBS/DAY	********	**1.690 MON AVG**	**3.980 DAILY MAX**	MG/L		**ONCE/MONTH**	**COMPOSITE**
ZINC, TOTAL (AS ZN)	SAMPLE MEASUREMENT	55.56	55.56	(26)	********	0.230	0.230	(19)	0	1/31	Composite
01092 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**138.77 MON AVG**	**277.54 DAILY MAX**	LBS/DAY	********	**0.635 MON AVG**	**1.270 DAILY MAX**	MG/L		**ONCE/MONTH**	**COMPOSITE**
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	26.8	29.3	(03)	********	********	********		0	Continuous	N/A
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	**REPORT MON AVG**	**REPORT DAILY MAX**	MGD	********	********	********	****		**CONTINUOUS**	**RECORDER**
BOD, CARBONACEOUS 05 DAY, 20C	SAMPLE MEASUREMENT	1,519	2,658	(26)	********	********	********		0	3/7	Composite
80082 2 W 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	**6000 MON AVG**	**13000 DAILY MAX**	LBS/DAY	********	********	********	****		~~**WEEKLY**~~ 3/7	**COMPOSITE**
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE	DATE
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TYPED OR PRINTED		AREA CODE NUMBER	YEAR MO DAY

Forms by WindowChem(707)864-0845,p/n11090.v5 01.4/1/96

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 02 - 01 TO 99 - 02 - 28

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE [__] **

FORM APPROVED
OMB No. 2040-0004

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* AVERAGE	Quantity or *(54-61)* MAXIMUM	Loading UNIT	(4 Card Only) *(38-45)* MINIMUM	Quantity or *(46-53)* AVERAGE	Concentration *(54-61)* MAXIMUM	UNIT	NO. EX *(62-63)*	Frequency of Analysis *(64-68)*	Sample Type *(69-70)*
PH	SAMPLE MEASUREMENT	********	********		7.0	********	7.8	(12)	0	Continuous	N/A
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	**6.0 MINIMUM**	********	**9.0 MAXIMUM**	SU		**CONTINUOUS**	**RECORDER**
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	2,175	3,904	(26)	********	********	********		0	3/7	Composite
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	**10093 MON AVG**	**32687 DAILY MAX**	LBS/DAY	********	********	********	****		**3/WEEK**	**COMPOSITE**
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	28	44	(26)	********	0.1	0.2	(19)	0	1/7	Composite
00610 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**6664 MON AVG**	**13329 DAILY MAX**	LBS/DAY	********	**30.5 MON AVG**	**61.0 DAILY MAX**	MG/L		**1/WEEK**	**COMPOSITE**
CYANIDE, TOTAL (AS CN)	SAMPLE MEASUREMENT	< 1.77	< 1.77	(26)	********	< 0.010	< 0.010	(19)	0	1/28	Grab
00720 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**10.49 MON AVG**	**74.95 DAILY MAX**	LBS/DAY	********	**0.048 MON AVG**	**0.343 DAILY MAX**	MG/L		**ONCE/MONTH**	**GRAB**
CHROMIUM, TOTAL (AS CR)	SAMPLE MEASUREMENT	2.59	2.59	(26)	********	0.013	0.013	(19)	0	1/28	Composite
01034 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**10.93 MON AVG**	**21.85 DAILY MAX**	LBS/DAY	********	**0.050 MON AVG**	**0.100 DAILY MAX**	MG/L		**ONCE/MONTH**	**COMPOSITE**
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	4.48	4.48	(26)	********	0.022	0.022	(19)	0	1/28	Composite
01042 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**10.93 MON AVG**	**21.85 DAILY MAX**	LBS/DAY	********	**0.050 MON AVG**	**0.100 DAILY MAX**	MG/L		**ONCE/MONTH**	**COMPOSITE**
LEAD, TOTAL (AS PB)	SAMPLE MEASUREMENT	< 0.40	< 0.40	(26)	********	< 0.002	< 0.002	(19)	0	1/28	Composite
01051 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	**37.58 MON AVG**	**150.77 DAILY MAX**	LBS/DAY	********	**0.172 MON AVG**	**0.690 DAILY MAX**	MG/L		**ONCE/MONTH**	**COMPOSITE**

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE	DATE
H. H. Holliman, President Tennessee Eastman Division	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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	**(423) 229-2000**	99 - 03 - 10
TYPED OR PRINTED		AREA CODE NUMBER	YEAR MO DAY

Forms by WindowChem(707)884-0845;p/n11D90;v5.01;4/1/98

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*

DISCHARGE MONITORING REPORT (DMR)

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

FROM 99 - 02 - 01 TO 99 - 02 - 28

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE [__] **

FORM APPROVED
OMB No. 2040-0004

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* AVERAGE	Quantity or *(54-61)* MAXIMUM	Loading UNIT	(4 Card Only) *(38-45)* MINIMUM	Quantity or *(46-53)* AVERAGE	Concentration *(54-61)* MAXIMUM	UNIT	NO. EX *(62-63)*	Frequency of Analysis *(64-68)*	Sample Type *(69-70)*
NICKEL, TOTAL (AS NI)	SAMPLE MEASUREMENT	6.84	6.84	(26)	********	0.034	0.034	(19)	0	1/28	Composite
01067 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	369.28 MON AVG	869.66 DAILY MAX	LBS/DAY	********	1.690 MON AVG	3.980 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
ZINC, TOTAL (AS ZN)	SAMPLE MEASUREMENT	11.11	11.11	(26)	********	0.055	0.055	(19)	0	1/28	Composite
01092 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	138.77 MON AVG	277.54 DAILY MAX	LBS/DAY	********	0.635 MON AVG	1.270 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	25.5	30.0	(03)	********	********	********		0	Continuous	N/A
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MON AVG	REPORT DAILY MAX	MGD	********	********	********	****		CONTINUOUS	RECORDER
BOD, CARBONACEOUS 05 DAY, 20C	SAMPLE MEASUREMENT	1,106	1,843	(26)	********	********	********		0	3/7	Composite
80082 2 W 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	6000 MON AVG	13000 DAILY MAX	LBS/DAY	********	********	********	****		3/WEEK	COMPOSITE
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE
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TYPED OR PRINTED			AREA CODE NUMBER	YEAR MO DAY

Forms by WindowChem(707)864-0845;p/n11090;v5.01;4/1/96

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DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 03 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE [__] **

FORM APPROVED
OMB No. 2040-0004

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PARAMETER (32-37)		(3 Card Only) (46-53) AVERAGE	Quantity or (54-61) MAXIMUM	Loading UNIT	(4 Card Only) (38-45) MINIMUM	Quantity or (46-53) AVERAGE	Concentration (54-61) MAXIMUM	UNIT	NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
PH	SAMPLE MEASUREMENT	********	********		6.8	********	7.7	(12)	0	Continuous	N/A
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		CONTINUOUS	RECORDER
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	7,201	18,788	(26)	********	********	********		0	3/7	Composite
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	10093 MON AVG	32687 DAILY MAX	LBS/DAY	********	********	********	****		3/WEEK	COMPOSITE
NITROGEN, AMMONIA TOTAL (AS N)	SAMPLE MEASUREMENT	199	494	(26)	********	1.0	2.5	(19)	0	1/7	Composite
00610 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	8564 MON AVG	13329 DAILY MAX	LBS/DAY	********	3015 MON AVG	5110 DAILY MAX	MG/L		1/WEEK	COMPOSITE
CYANIDE, TOTAL (AS CN)	SAMPLE MEASUREMENT	< 2.02	< 2.02	(26)	********	< 0.010	< 0.010	(19)	0	1/31	Grab
00720 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.49 MON AVG	74.95 DAILY MAX	LBS/DAY	********	0.048 MON AVG	0.343 DAILY MAX	MG/L		ONCE/MONTH	GRAB
CHROMIUM, TOTAL (AS CR)	SAMPLE MEASUREMENT	5.43	5.43	(26)	********	0.026	0.026	(19)	0	1/31	Composite
01034 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.93 MON AVG	21.85 DAILY MAX	LBS/DAY	********	0.050 MON AVG	0.100 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	6.88	6.88	(26)	********	0.033	0.033	(19)	0	1/31	Composite
01042 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.93 MON AVG	21.85 DAILY MAX	LBS/DAY	********	0.050 MON AVG	0.100 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
LEAD, TOTAL (AS PB)	SAMPLE MEASUREMENT	< 6.21	< 6.21	(26)	********	< 0.030	< 0.030	(19)	0	1/31	Composite
01051 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	37.58 MON AVG	150.77 DAILY MAX	LBS/DAY	********	0.172 MON AVG	0.690 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE
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TYPED OR PRINTED			AREA CODE NUMBER	YEAR MO DAY

Forms by WindowChem(707)864-0845;p/n11090;v5.01;4/1/98

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DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 03 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
INDUSTRIAL PROCESS WASTEWATER
EFFLUENT
** NO DISCHARGE [__] **

FORM APPROVED
OMB No. 2040-0004

NOTE: Read instructions before completing this form.

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* AVERAGE	Quantity or *(54-61)* MAXIMUM	Loading UNIT	(4 Card Only) *(38-45)* MINIMUM	Quantity or *(46-53)* AVERAGE	Concentration *(54-61)* MAXIMUM	UNIT	NO. EX *(62-63)*	Frequency of Analysis *(64-68)*	Sample Type *(69-70)*
NICKEL, TOTAL (AS NI)	SAMPLE MEASUREMENT	5.69	5.69	(26)	********	0.027	0.027	(19)	0	1/31	Composite
01067 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	359.28 MON AVG	869.66 DAILY MAX	LBS/DAY	********	1.690 MON AVG	3.980 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
ZINC, TOTAL (AS ZN)	SAMPLE MEASUREMENT	20.72	20.72	(26)	********	0.100	0.100	(19)	0	1/31	Composite
01092 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	138.77 MON AVG	277.54 DAILY MAX	LBS/DAY	********	0.635 MON AVG	1.270 DAILY MAX	MG/L		ONCE/MONTH	COMPOSITE
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	25.5	30.0	(03)	********	********	********		0	Continuous	N/A
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MON AVG	REPORT DAILY MAX	MGD	********	********	********	****		CONTINUOUS	RECORDER
BOD, CARBONACEOUS 05 DAY, 20C	SAMPLE MEASUREMENT	2,687	4,231	(26)	********	********	********		0	3/7	Composite
80082 2 W 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	6000 MON AVG	13000 DAILY MAX	LBS/DAY	********	********	********	****		3/WEEK	COMPOSITE
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE
H. H. Hollman, President Tennessee Eastman Division	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 OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	(423) 229-2000 AREA CODE NUMBER	99 - 04 - 12 YEAR MO DAY
TYPED OR PRINTED				

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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PERMITTEE NAME/ADDRESS:
TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640 — PERMIT NUMBER
002 Q — DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT
*** NO DISCHARGE |__| ***
NOTE: Read instructions before completing this form.

FORM APPROVED
OMB No.2040-0004

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* Quantity or Loading Average	Maximum	Unit	(4 Card Only) *(38-45)* Quality or Concentration Minimum	Average	Maximum	Unit	NO. EX *(62-63)*	Frequency of analysis *(64-68)*	Sample Type *(69-70)*
CARBON TETRACHLORIDE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quater	Grab
32102 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.93 MON. AVG	8.30 DAILY MAX	LBS/DAY	********	0.018 MON. AVG	0.038 DAILY MAX	MG/L		QUARTERLY	GRAB
1,2-DICHLOROETHANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
32103 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	14.86 MON. AVG	26.11 DAILY MAX	LBS/DAY	********	0.068 MON. AVG	0.211 DAILY MAX	MG/L		QUARTERLY	GRAB
CHLOROFORM	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
32106 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.59 MON. AVG	10.05 DAILY MAX	LBS/DAY	********	0.021 MON. AVG	0.046 DAILY MAX	MG/L		QUARTERLY	GRAB
TOLUENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34010 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.68 MON. AVG	17.48 DAILY MAX	LBS/DAY	********	0.026 MON. AVG	0.080 DAILY MAX	MG/L		QUARTERLY	GRAB
ACENAPHTHYLENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34200 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.75 MON. AVG.	3.54 DAILY MAX	LBS/DAY	********	0.008 MON. AVG	0.016 DAILY MAX	MG/L		QUARTERLY	GRAB
ACENAPHTHENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34205 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.81 MON. AVG	12.89 DAILY MAX	LBS/DAY	********	0.022 MON. AVG	0.059 DAILY MAX	MG/L		QUARTERLY	GRAB
ACRYLONITRILE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34215 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	20.98 MON. AVG	52.88 DAILY MAX	LBS/DAY	********	0.096 MON. AVG	0.242 DAILY MAX	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

H. H. Holliman, President

Tennessee Eastman Division

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: (423) 229-2000 (AREA CODE NUMBER)

DATE: 99 - 04 - 12 (YEAR MO DAY)

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Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640 — PERMIT NUMBER
002 Q — DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT
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FORM APPROVED
OMB No.2040-0004

PARAMETER (32-37)		(3 Card Only) (46-53) Quantity or Loading Average	Maximum	Unit	(4 Card Only) (38-45) Quality or Concentration Minimum	Average	Maximum	Unit	NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
ANTHRACENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34220 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.179 MON AVG	0.354 DAILY MAX	LBS/DAY	********	0.00082 MON AVG	0.00162 DAILY MAX	MG/L		QUARTERLY	GRAB
BENZENE, DISSOLVED	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34235 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	8.08 MON AVG	29.72 DAILY MAX	LBS/DAY	********	0.037 MON AVG	0.136 DAILY MAX	MG/L		QUARTERLY	GRAB
BENZO (K) FLUORANTHENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34242 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.75 MON AVG	3.54 DAILY MAX	LBS/DAY	********	0.008 MON AVG	0.016 DAILY MAX	MG/L		QUARTERLY	GRAB
BENZO (A) PYRENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34247 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.75 MON AVG	3.54 DAILY MAX	LBS/DAY	********	0.008 MON AVG	0.016 DAILY MAX	MG/L		QUARTERLY	GRAB
CHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34301 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.28 MON AVG	6.12 DAILY MAX	LBS/DAY	********	0.015 MON AVG	0.028 DAILY MAX	MG/L		QUARTERLY	GRAB
CHRYSENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34320 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.179 MON AVG	0.354 DAILY MAX	LBS/DAY	********	0.00082 MON AVG	0.00162 DAILY MAX	MG/L		QUARTERLY	GRAB
DIETHYL PHTHALATE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34336 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	17.70 MON AVG	44.36 DAILY MAX	LBS/DAY	********	0.081 MON AVG	0.203 DAILY MAX	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. H. Holliman, President

Tennessee Eastman Division
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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640 — PERMIT NUMBER
002 Q — DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT
*** NO DISCHARGE ☐ ***

FORM APPROVED
OMB No.2040-0004

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PARAMETER (32-37)		(3 Card Only) (46-53) Quantity or Average	(3 Card Only) (46-53) Quantity or Maximum	Loading Unit	(4 Card Only) (38-45) Quality or Minimum	(4 Card Only) (46-53) Quality or Average	(4 Card Only) (54-61) Concentration Maximum	Unit	NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
DIMETHYL PHTHALATE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34341 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.15 MON.AVG.	10.27 DAILY MAX.	LBS/DAY	********	0.019 MON.AVG.	0.042 DAILY MAX.	MG/L		QUARTERLY	GRAB
FLUORANTHENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34376 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	5.46 MON.AVG.	11.86 DAILY MAX.	LBS/DAY	********	0.0025 MON.AVG.	0.068 DAILY MAX.	MG/L		QUARTERLY	GRAB
FLUORENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34381 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.179 MON.AVG.	0.354 DAILY MAX.	LBS/DAY	********	0.00082 MON.AVG.	0.00152 DAILY MAX.	MG/L		QUARTERLY	GRAB
HEXACHLOROBUTADIENE	SAMPLE MEASUREMEN	********	<1.33	(26)	********	********	<0.007	(19)	0	1/Quarter	Grab
34391 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.137 MON.AVG.	0.171 DAILY MAX.	LBS/DAY	********	0.020 MON.AVG.	0.049 DAILY MAX.	MG/L		QUARTERLY	GRAB
HEXACHLOROETHANE	SAMPLE MEASUREMEN	********	<1.52	(26)	********	********	<0.008	(19)	0	1/Quarter	Grab
34396 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.59 MON.AVG.	11.80 DAILY MAX.	LBS/DAY	********	0.021 MON.AVG.	0.053 DAILY MAX.	MG/L		QUARTERLY	GRAB
METHYL CHLORIDE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34418 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	16.79 MON.AVG.	41.52 DAILY MAX.	LBS/DAY	********	0.086 MON.AVG.	0.190 DAILY MAX.	MG/L		QUARTERLY	GRAB
METHYLENE CHLORIDE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34423 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	8.74 MON.AVG.	19.45 DAILY MAX.	LBS/DAY	********	0.040 MON.AVG.	0.089 DAILY MAX.	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

H. H. Holliman, President

Tennessee Eastman Division

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DISCHARGE MONITORING REPORT *(DMR)*

TN0002640 — PERMIT NUMBER
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MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

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FORM APPROVED
OMB No.2040-0004

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* Quantity or *(54-61)* Loading			(4 Card Only) *(38-45)* Quality or *(46-53)* Concentration *(54-61)*				NO. EX *(62-63)*	Frequency of analysis *(64-68)*	Sample Type *(69-70)*
		Average	Maximum	Unit	Minimum	Average	Maximum	Unit			
NITROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34447 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	5.90 MON. AVG.	14.86 DAILY MAX.	LBS/DAY	********	0.027 MON. AVG.	0.068 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
PHENANTHRENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34461 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.179 MON. AVG.	0.354 DAILY MAX.	LBS/DAY	********	0.00082 MON. AVG.	0.00162 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
PYRENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34469 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.179 MON. AVG.	0.354 DAILY MAX.	LBS/DAY	********	0.00082 MON. AVG.	0.00162 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
TETRACHLOROETHYLENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34475 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.81 MON. AVG.	12.24 DAILY MAX.	LBS/DAY	********	0.022 MON. AVG.	0.056 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
1,1 - DICHLOROETHANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34496 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.81 MON. AVG.	12.89 DAILY MAX.	LBS/DAY	********	0.022 MON. AVG.	0.059 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
1,1 - DICHLOROETHYLENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34501 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMEN	3.50 MON. AVG.	5.46 DAILY MAX.	LBS/DAY	********	0.016 MON. AVG.	0.025 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB
1,1,1 - TRICHLOROETHANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34506 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.59 MON. AVG.	11.80 DAILY MAX.	LBS/DAY	********	0.021 MON. AVG.	0.054 DAILY MAX.	MG/L	NA	QUARTERLY	GRAB

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PARAMETER (32-37)		(3 Card Only) (46-53) Quantity or Loading Average	Quantity or Loading Maximum	Unit	(4 Card Only) (38-45) Quality or Concentration Minimum	Quality or Concentration Average	Quality or Concentration Maximum	Unit	NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
1,1,2 - TRICHLOROETHANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34511 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.59 MON AVG	11.80 DAILY MAX	LBS/DAY	********	0.021 MON AVG	0.054 DAILY MAX	MG/L		QUARTERLY	GRAB
BENZO (A) ANTHRACENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34526 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.75 MON AVG	3.54 DAILY MAX	LBS/DAY	********	0.008 MON AVG	0.016 DAILY MAX	MG/L		QUARTERLY	GRAB
1,2 - DICHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34536 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	16.83 MON AVG	35.62 DAILY MAX	LBS/DAY	********	0.077 MON AVG	0.163 DAILY MAX	MG/L		QUARTERLY	GRAB
1,2 - DICHLOROPROPANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34541 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	33.43 MON AVG	50.26 DAILY MAX	LBS/DAY	********	0.153 MON AVG	0.230 DAILY MAX	MG/L		QUARTERLY	GRAB
1,2 - TRANS - DICHLOROETHYLENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34546 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.59 MON AVG	11.80 DAILY MAX	LBS/DAY	********	0.021 MON AVG	0.054 DAILY MAX	MG/L		QUARTERLY	GRAB
1,2,4 - TRICHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34551 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	14.86 MON AVG	30.59 DAILY MAX	LBS/DAY	********	0.068 MON AVG	0.140 DAILY MAX	MG/L		QUARTERLY	GRAB
1,3 - DICHLOROPROPENE, TOTAL WEIGHT	SAMPLE MEASUREMEN	********	<0.38	(26)	********	********	<0.002	(19)	0	1/Quarter	Grab
34561 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.34 MON AVG	9.61 DAILY MAX	LBS/DAY	********	0.029 MON AVG	0.044 DAILY MAX	MG/L		QUARTERLY	GRAB

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DATE: 99 - 04 - 12 (YEAR MO DAY)

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PERMITTEE NAME/ADDRESS:
TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT
*** NO DISCHARGE [ ] ***
NOTE: Read instructions before completing this form.

FORM APPROVED
OMB No.2040-0004

PARAMETER (32-37)		(3 Card Only) (46-53) Quantity or Loading Average	Maximum	Unit	(4 Card Only) (38-45) Quality or Concentration Minimum	Average	Maximum	Unit	NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
1,3 - DICHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34566 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.27 MON. AVG.	9.61 DAILY MAX	LBS/DAY	********	0.031 MON.AVG	0.044 DAILY MAX	MG/L		QUARTERLY	GRAB
1,4 - DICHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34571 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.26 MON. AVG.	6.12 DAILY MAX	LBS/DAY	********	0.015 MON.AVG	0.028 DAILY MAX.	MG/L		QUARTERLY	GRAB
2 - CHLOROPHENOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34586 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.77 MON.AVG.	21.41 DAILY MAX.	LBS/DAY	********	0.031 MON.AVG	0.098 DAILY MAX.	MG/L		QUARTERLY	GRAB
2 - NITROPHENOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34591 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	8.96 MON.AVG.	15.08 DAILY MAX.	LBS/DAY	********	0.021 MON.AVG	0.069 DAILY MAX.	MG/L		QUARTERLY	GRAB
2,4 - DICHLOROPHENOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34601 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMEN	8.52 MON.AVG.	24.47 DAILY MAX.	LBS/DAY	********	0.039 MON.AVG.	0.112 DAILY MAX.	MG/L		QUARTERLY	GRAB
2,4 - DIMETHYLPHENOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34606 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMEN	3.93 MON.AVG.	7.87 DAILY MAX.	LBS/DAY	********	0.018 MON.AVG	0.036 DAILY MAX.	MG/L		QUARTERLY	GRAB
2,4 - DINITROTOLUENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34611 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	24.69 MON. AVG.	62.27 DAILY MAX.	LBS/DAY	********	0.113 MON.AVG	0.285 DAILY MAX.	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. H. Holliman, President
Tennessee Eastman Division
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 USC 1001 AND 33 USC 1319. (PENALTIES UNDER THESE STATUTES MAY INCLUDE FINES UP TO $10,000 AND OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: (423) 229-2000 (AREA CODE NUMBER)
DATE: 99 - 04 - 12 (YEAR MO DAY)

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640 — PERMIT NUMBER
002 Q — DISCHARGE NUMBER

MONITORING PERIOD: FROM 99 - 01 - 01 TO 99 - 03 - 31

MAJOR
(SUBR 06)
F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT
*** NO DISCHARGE |_| ***
NOTE: Read instructions before completing this form.

FORM APPROVED
OMB No.2040-0004

PARAMETER *(32-37)*		(3 Card Only) *(46-53)* Quantity or Loading Average	Maximum	Unit	(4 Card Only) *(38-45)* Quality or Concentration Minimum	Average	Maximum	Unit	NO. EX *(62-63)*	Frequency of analysis *(64-68)*	Sample Type *(69-70)*
2,4 - DINITROPHENOL	SAMPLE MEASUREMEN	********	<1.52	(26)	********	********	<0.008	(19)	0	1/Quarter	Grab
34616 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	15.61 MON AVG	26.88 DAILY MAX	LBS/DAY	********	0.071 MON AVG	0.123 DAILY MAX	MG/L		QUARTERLY	GRAB
2,6 - DINITROTOLUENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34626 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.92 MON AVG	3.31 DAILY MAX	LBS/DAY	********	0.005 MON AVG	0.009 DAILY MAX	MG/L		QUARTERLY	GRAB
4 - NITROPHENOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34646 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	15.73 MON AVG	27.09 DAILY MAX	LBS/DAY	********	0.072 MON AVG	0.124 DAILY MAX	MG/L		QUARTERLY	GRAB
4,6 - DINITRO - O - CRESOL	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34657 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	17.04 MON AVG	60.53 DAILY MAX	LBS/DAY	********	0.078 MON AVG	0.277 DAILY MAX	MG/L		QUARTERLY	GRAB
PHENOL, SINGLE COMPOUND	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34694 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.28 MON AVG	5.66 DAILY MAX	LBS/DAY	********	0.015 MON AVG	0.026 DAILY MAX	MG/L		QUARTERLY	GRAB
NAPHTHALENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
34696 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.81 MON AVG	12.89 DAILY MAX	LBS/DAY	********	0.022 MON AVG	0.059 DAILY MAX	MG/L		QUARTERLY	GRAB
ETHYL BENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
37371 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.99 MON AVG	23.60 DAILY MAX	LBS/DAY	********	0.032 MON AVG	0.108 DAILY MAX	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE	DATE
H. H. Holliman, President Tennessee Eastman Division	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 USC 1001 AND 33 USC 1319. (PENALTIES UNDER THESE STATUTES MAY INCLUDE FINES UP TO $10,000 AND OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS.)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	(423) 229-2000	99 - 04 - 12
TYPED OR PRINTED			AREA CODE NUMBER	YEAR MO DAY

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

TN0002640	002 Q
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD			
FROM	99 - 01 - 01	TO	99 - 03 - 31

MAJOR
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FORM APPROVED
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PARAMETER *(32-37)*		(3 Card Only) *(46-53)* Quantity or *(54-61)* Loading			(4 Card Only) *(38-45)* Quality or *(46-53)* Concentration *(54-61)*				NO. EX *(62-63)*	Frequency of analysis *(64-68)*	Sample Type *(69-70)*
		Average	Maximum	Unit	Minimum	Average	Maximum	Unit			
BIS (2 - ETHYLHEXYL) PHTHALATE	SAMPLE MEASUREMEN	********	5.15	(26)	********	********	0.027	(19)	0	1/Quarter	Grab
39100 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	22.51 MON. AVG.	60.96 DAILY MAX.	LBS/DAY	********	0.103 MON. AVG.	0.279 DAILY MAX.	MG/L		QUARTERLY	GRAB
DI - N - BUTYL PHTHALATE	SAMPLE MEASUREMEN	********	<0.38	(26)	********	********	<0.002	(19)	0	1/Quarter	Grab
39110 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	5.90 MON. AVG.	12.45 DAILY MAX.	LBS/DAY	********	0.027 MON. AVG.	0.057 DAILY MAX.	MG/L		QUARTERLY	GRAB
VINYL CHLORIDE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
39175 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	22.72 MON. AVG.	58.56 DAILY MAX.	LBS/DAY	********	0.104 MON. AVG.	0.268 DAILY MAX.	MG/L		QUARTERLY	GRAB
TRICHLOROETHYLENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
39180 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.59 MON. AVG.	11.80 DAILY MAX.	LBS/DAY	********	0.021 MON. AVG.	0.054 DAILY MAX.	MG/L		QUARTERLY	GRAB
HEXACHLOROBENZENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
39700 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	0.041 MON. AVG.	0.081 DAILY MAX.	LBS/DAY	********	0.000186 MON. AVG.	0.000372 DAILY MAX.	MG/L		QUARTERLY	GRAB
3,4 BENZOFLUORANTHENE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
79531 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.764 MON. AVG.	3.64 DAILY MAX.	LBS/DAY	********	0.008 MON. AVG.	0.016 DAILY MAX.	MG/L		QUARTERLY	GRAB
CHLOROETHANE	SAMPLE MEASUREMEN	********	<0.19	(26)	********	********	<0.001	(19)	0	1/Quarter	Grab
85811 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	22.72 MON. AVG.	58.56 DAILY MAX.	LBS/DAY	********	0.104 MON. AVG.	0.268 DAILY MAX.	MG/L		QUARTERLY	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

H. H. Holliman, President

Tennessee Eastman Division

TYPED OR PRINTED

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