3.0 DISPERSION MODELING METHODOLOGY

As previously stated, the dispersion modeling analysis presented in this report only addresses the following emissions from the Foamex facility:

- Methylene Chloride from the slabstock foam manufacturing process and from the gluing process during foam fabrication operations;
- Toluene Diisocyanate from the slabstock foam manufacturing process and rebond foam manufacturing process; and
- 1,1,1-Trichloroethane from the gluing process during foam fabrication operations.

The methodology followed in the dispersion modeling analysis is as follows:

1) A downwash/Good Engineering Practice (GEP) stack height analysis was conducted utilizing EPA's new Building Profile Input Program (BPIP), dated 94074.
2) Emission rates for each compound and process were calculated based on maximum daily and annual usage of each compound.
3) The EPA Industrial Source Complex - Short Term model (ISCST2), dated 93109, was used to predict the 8-hour and 24-hour impacts of each compound and annual impacts of methylene chloride from the facility.
4) The resulting concentrations were then compared with FDEP's AAAC's for each compound to determine if they are below the AAAC's.

4.0 SOURCE DATA

The source data used in the dispersion modeling analysis are presented in Table 3 below. The location of each source is shown in Figure 2.

Table 3. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Stack Location Coordinates[b] (feet) East	North
1	Foam Line Stack	125	33.75	30,000	80	80.481	577	393
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	500	56
3	Exhaust Fan	Not operational as part of enhanced exhaust system					356	319
4	Exhaust Fan	Not operational as part of enhanced exhaust system					356	363
5	Exhaust Fan	Not operational as part of enhanced exhaust system					356	393
6	Exhaust Fan	Not operational as part of enhanced exhaust system					356	445
7	Exhaust Fan	53	43.5	50,000	80	80.744	356	501
8	Exhaust Fan	Not operational as part of enhanced exhaust system					356	554
9	Exhaust Fan	Not operational as part of enhanced exhaust system					356	603
10	Exhaust Fan	Not operational as part of enhanced exhaust system					356	633
11	Exhaust Fan	Not operational as part of enhanced exhaust system					484	319
12	Exhaust Fan	53	43.5	50,000	80	80.744	484	363
13	Exhaust Fan	Not operational as part of enhanced exhaust system					484	393
14	Exhaust Fan	Not operational as part of enhanced exhaust system					484	445
15	Exhaust Fan	Not operational as part of enhanced exhaust system					484	501
16	Exhaust Fan	Not operational as part of enhanced exhaust system					484	554
17	Exhaust Fan	Not operational as part of enhanced exhaust system					484	603
18	Exhaust Fan	Not operational as part of enhanced exhaust system					484	633
19	Exhaust Fan	53	43.5	50,000	80	80.744	600	336.5
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	534
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	546

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

b. See Figure 2 for stack locations.

Table 5. GEP Stack Heights and Modeled Stack Heights
Foamex, L.P. - Orlando Facility

		Stack Heights Above Ground Level	
Source Number	Description	GEP (feet)	Modeled (feet)
1	Foam Line Stack	125	125
2	Long Bun Storage Room Stack	125	125
3	Exhaust Fan	Not modeled[a]	
4	Exhaust Fan	Not modeled[a]	
5	Exhaust Fan	Not modeled[a]	
6	Exhaust Fan	Not modeled[a]	
7	Exhaust Fan	125	53
8	Exhaust Fan	Not modeled[a]	
9	Exhaust Fan	Not modeled[a]	
10	Exhaust Fan	Not modeled[a]	
11	Exhaust Fan	Not modeled[a]	
12	Exhaust Fan	125	53
13	Exhaust Fan	Not modeled[a]	
14	Exhaust Fan	Not modeled[a]	
15	Exhaust Fan	Not modeled[a]	
16	Exhaust Fan	Not modeled[a]	
17	Exhaust Fan	Not modeled[a]	
18	Exhaust Fan	Not modeled[a]	
19	Exhaust Fan	125	53
20	Rebond Exhaust Fan	100	53
21	Rebond Exhaust Fan	100	53

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

11.0 COMPOUNDS AND APPLICABLE STANDARDS

The impacts of the compounds listed in Table 6 below were examined in this dispersion modeling analysis. The resulting concentrations were then compared with the listed applicable FDEP AAAC's to determine if they are below the AAAC's.

Table 6. Compounds Analyzed and AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,740
	24-hour	417.6
	Annual	2.1
Toluene Diisocyanate	8-hour	0.36
	24-hour	0.0864
1,1,1-Trichloroethane	8-hour	38,200
	24-hour	9,168

12.0 CONCENTRATIONS CALCULATED

For comparison with the FDEP AAAC's the maximum concentrations were calculated for each compound by the ISCST2 model for the 8-hour and 24-hour averaging times. The annual average concentration was also calculated for methylene chloride by the ISCST2 model by using the PERIOD keyword in the averaging times parameter list.

13.0 EMISSION RATES

Maximum hourly and daily usage rates were used to calculate the 8-hour and 24-hour average emission rates for each compound listed in Table 6. The maximum annual usage of methylene chloride was used to calculate the annual average emission rates of methylene chloride from the facility. The calculation of the emission rates used in the analysis is shown below and summarized in Table 7.

Compounds modeled:

Methylene Chloride
Toluene Diisocyanate (TDI)
1,1,1-Trichloroethane

Slabstock Foam Production Methylene Chloride emission distribution:

Foam Line Stack	=	60%
Long Bun Storage Room Stack	=	35%
3 Exhaust Fans	=	5%

It is assumed that the 3 exhaust fans' emissions are equally distributed among all 3 exhaust fans.

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production methylene chloride usage = 14,000 lb/day

8-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 8 hr/day
= 1,750.0 lb/hr

Distributed 8-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	1,750.0 lb/hr x 60%	=	1,050.0 lb/hr
Long Bun Storage Room Stack	=	1,750.0 lb/hr x 35%	=	612.5 lb/hr
3 Exhaust Fans	=	1,750.0 lb/hr x 5%	=	87.5 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum methylene chloride content of glue = 70%

Maximum hourly gluing process methylene chloride emission rate = 3.1 lb/hr x 70% = 2.17 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.17 lb/hr

Distributed 8-hour average total methylene chloride emission rates:

Foam Line Stack	=	1,050.0 lb/hr		
Long Bun Storage Room Stack	=	612.5 lb/hr		
3 Exhaust Fans	=	87.5 lb/hr + 2.17 lb/hr	=	89.67 lb/hr
Each Exhaust Fan	=	89.67 lb/hr ÷ 3	=	29.89 lb/hr

24-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 24 hr/day
= 583.333 lb/hr

Distributed 24-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	583.333 lb/hr x 60%	=	350.0 lb/hr
Long Bun Storage Room Stack	=	583.333 lb/hr x 35%	=	204.167 lb/hr
3 Exhaust Fans	=	583.333 lb/hr x 5%	=	29.167 lb/hr

24-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.17 lb/hr

Distributed 24-hour average total methylene chloride emission rates:

Foam Line Stack	=	350.0 lb/hr		
Long Bun Storage Room Stack	=	204.167 lb/hr		
3 Exhaust Fans	=	29.167 lb/hr + 2.17 lb/hr	=	31.337 lb/hr
Each Exhaust Fan	=	31.337 lb/hr ÷ 3	=	10.4457 lb/hr

Maximum annual slabstock foam production methylene chloride usage = 551,192 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 551,192 lb/yr ÷ 8,760 hr/yr
= 62.921 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	62.921 lb/hr x 60%	=	37.7526 lb/hr
Long Bun Storage Room Stack	=	62.921 lb/hr x 35%	=	22.02235 lb/hr
3 Exhaust Fans	=	62.921 lb/hr x 5%	=	3.14605 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	37.7526 lb/hr		
Long Bun Storage Room Stack	=	22.02235 lb/hr		
3 Exhaust Fans	=	3.14605 lb/hr + 0.3676 lb/hr	=	3.51365 lb/hr
Each Exhaust Fan	=	3.51365 lb/hr ÷ 3	=	1.171217 lb/hr

Maximum slabstock foam production TDI emission rate = 0.37 lb/hr

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production TDI emissions = 0.37 lb/hr x 6.0 hr/day = 2.22 lb/day

TDI emission factor = 0.000028 lb emitted/lb used

Maximum hourly rebond process TDI usage rate = 164 lb/hr

Maximum hourly rebond process TDI emission rate = 164 lb/hr x 0.000028 lb/lb = 0.0046 lb/hr

Maximum daily rebond process hours of operation = 24.0 hr/day

8-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 8 hr/day	=	0.2775 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 8 hr/day ÷ 8 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0046 lb/hr ÷ 2	=	0.0023 lb/hr

24-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 24 hr/day	=	0.0925 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 24 hr/day ÷ 24 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0023 lb/hr ÷ 2	=	0.0023 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum 1,1,1-trichloroethane content of glue = 81%

Maximum hourly 1,1,1-trichloroethane emission rate = 3.1 lb/hr x 81% = 2.5 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	=	2.5 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.5 lb/hr
Each Exhaust Fan	=	2.5 lb/hr ÷ 3	=	0.83333 lb/hr

24-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	= 2.5 lb/hr x 24 hr/day ÷ 24 hr/day	= 2.5 lb/hr
Each Exhaust Fan	= 2.5 lb/hr ÷ 3	= 0.83333 lb/hr

Table 7. Emission Rates
Foamex, L.P. - Orlando, Florida

		Emission Rates for Compounds Modeled						
		Methylene Chloride			Toluene Diisocyanate		1,1,1-Trichloroethane	
Source Number	Source Description	8-hour (lb/hr)	24-hour (lb/hr)	Annual (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)
1	Foam Line Stack	1,050.0	350.0	37.7526	0.2775	0.0925	0.0	0.0
2	Long Bun Storage Room Stack	612.5	204.167	22.02235	0.0	0.0	0.0	0.0
3	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
8	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
13	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
20	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0
21	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP AAAC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP AAAC's. The resulting maximum annual ground level concentration for methylene chloride is 2.09998 $\mu g/m^3$, which is below the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's AAAC's.

Table 8. ISCST2 Modeling Results and Comparison with FDEP AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,538.9	1,740
	24-hour	250.8	417.6
	Annual	2.09998	2.1
Toluene Diisocyanate	8-hour	0.29	0.36
	24-hour	0.04	0.0864
1,1,1-Trichloroethane	8-hour	10.1	38,200
	24-hour	6.7	9,168

Harding Lawson Associates

March 15, 1996

VIA FACSIMILE
(904) 922-6979

26005.F21.816

Mr. C.H. Fancy, P.E.
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

This letter is to provide clarification regarding the requested modification of Construction Permit AC48-214902 for the Foamex L.P. flexible polyurethane foam manufacturing facility located in Orlando, Florida.

In our letter dated March 1, 1996, we explained that the permit amendment is requested to obtain approval to increase the annual methylene chloride usage at the Orlando facility. As we discussed during our meeting on February 22, 1996, this increase is requested to allow the facility to prepare for installation and startup of a new process technology, that will greatly reduce the use of methylene chloride as a blowing agent at the facility, and may eventually eliminate the need for it entirely. The requested increase is intended only for a maximum of five years. After this time period is expired (and perhaps before), the facility's methylene chloride usage will be greatly reduced.

Should you have any questions or comments concerning this matter, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

Joseph L. Tessitore

Joseph L. Tessitore, P.E.
Managing Principal

pkr\26005964.doc

cc: Mr. Doug Terrill, Foamex International
Mr. Tom Burghardt, Foamex International

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

Harding Lawson Associates

March 15, 1996

VIA FACSIMILE
(904) 922-6979

26005.F21.816

Mr. C.H. Fancy, P.E.
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

This letter is to provide clarification regarding the requested modification of Construction Permit AC48-214902 for the Foamex L.P. flexible polyurethane foam manufacturing facility located in Orlando, Florida.

In our letter dated March 1, 1996, we explained that the permit amendment is requested to obtain approval to increase the annual methylene chloride usage at the Orlando facility. As we discussed during our meeting on February 22, 1996, this increase is requested to allow the facility to prepare for installation and startup of a new process technology, that will greatly reduce the use of methylene chloride as a blowing agent at the facility, and may eventually eliminate the need for it entirely. The requested increase is intended only for a maximum of five years. After this time period is expired (and perhaps before), the facility's methylene chloride usage will be greatly reduced.

Should you have any questions or comments concerning this matter, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

Joseph L. Tessitore

Joseph L. Tessitore, P.E.
Managing Principal

pkr\26005964.doc

cc: Mr. Doug Terrill, Foamex International
Mr. Tom Burghardt, Foamex International

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

APR-15-96 13:27 FROM:HARDING LAWSON ASSOC ID:4078550369 PAGE 2/2

Memorandum

Florida Department of
Environmental Protection

Clair

To: Howard L. Rhodes

Thru: C. H. Fancy

From: Willard Hanks WmH

Date: June 19, 1996

Subject: Modification of Permit
Foamex, L.P.

Attached for your approval and signature is a letter that will modify the construction permit for Foamex's flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida.

The modification will allow the permittee to increase methylene chloride usage and emissions by approximately 12 percent from 261 to 280 TPY. This will result in a 19 TPY increase in methylene chloride emissions. The foam fabrication operation will be conducted in a smaller area which will allow 14 of the 17 exhaust fans to be shut down. The permit will be extended for 1 year to allow time to obtain a permit to operate.

Modeling results of the reconfigured plant and higher emission rates shows the Ambient Reference Concentration for methylene chloride is not exceeded.

The only comments received in response to the public notice were from the applicant. Foamex requested the allowable methylene chloride emissions from the facility and the slabstock polyurethane foam process be clarified. The Bureau agreed to this request and reworded the changes to proposed Specific Condition No. 2.

I recommend your approval and signature.

CHF/wh/t

Attachments

P 339 251 114

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to Douglas Terrill	
Street & Number Foamex, LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 6-21-96 AC 48-2149021A	

PS Form **3800**, April 1995

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrill, P.M.
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
P 339 251 114

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
6/24

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
M Barber 6/24

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

TRANSMITTAL

RECEIVED
JUN 10 1996
BUREAU OF
AIR REGULATION

To:	Mr. Willard Hanks Bureau of Air Regulation Florida Department of Environmental Protection 2600 Blair Stone Road Tallahassee, Florida 32399-2400
From:	John Wolber
Date:	June 11, 1996
Subject:	Foamex, L.P. - Request for Permit Amendment Permit No. AC48-214902A
Project Number:	26005.F21.816

Willard:

Please find attached three (3) additional copies of the June 3, 1996 Request for Permit Amendment for Foamex, L.P. (Permit No. AC48-214902A) without the modeling output listings.

Also attached is a corrected page 25 for Attachment C (Revise Pages to Volume II: Dispersion Modeling Analysis) to be inserted in the original submission. The date of the referenced Request for Permit Amendment was corrected on this page.

If you have any questions or require any additional information, please call Kay Rykowski or me.

JOHN

JMW/26005W25.DOC

Attachments

cc: Kay Rykowski

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP ARC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP ARC's. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's **8-hour and 24-hour ARC's.**

The resulting maximum annual ground level concentration for methylene chloride is 2.73 $\mu g/m^3$, which is greater than the FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$. Therefore, based on Foamex's commitment to reduce the annual usage of methylene chloride as a blowing agent after five years to less than half of the current usage rate of 720,000 lbs/yr, a risk assessment was conducted to show that the exposure to the estimated methylene chloride emissions from the facility over a lifetime (70 years) pose less than a one-in-one-million increased cancer risk. The risk assessment was submitted to FDEP as an attachment to Foamex's Request for Permit Ammendment, dated June 3, 1996.

Table 8. ISCST2 Modeling Results and Comparison with FDEP ARC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP ARC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,538.9	1,740
	24-hour	250.8	414
	Annual	2.73	2.0
Toluene Diisocyanate	8-hour	0.3	0.4
	24-hour	0.05	0.09
1,1,1-Trichloroethane	8-hour	10.1	19,000
	24-hour	6.7	4,524

June 3, 1996

26005.F21.816

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
JUN 10 1996
BUREAU OF
AIR REGULATION

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902A

Dear Mr. Fancy:

INTRODUCTION

This letter is to request an amendment to Construction Permit AC48-214902A, issued to Foamex, L.P. This letter presents a summary of the requested changes to Specific Conditions 1, 2, and 4 issued by FDEP. The requested changes include an increase in the annual methylene chloride usage in the slabstock foam production process and a modification to the enhanced exhaust system for the rebond foam production process. This amendment is requested to allow Foamex to increase slabstock foam production at their Orlando facility in the short term, for a period of up to five years, in preparation for the installation of an alternate manufacturing technology that will reduce the annual usage of methylene chloride as a blowing agent in the slabstock foam production process to less than half of the requested usage rate.

As discussed in the following comments and supported by the attachments, the predicted maximum ground level concentration for toluene diisocyanate (TDI) does not exceed the FDEP Ambient Reference Concentration (ARC) and the methylene chloride emissions from the facility pose a less than a one-in-one-million increased cancer risk as a result of the requested changes to Specific Conditions 1, 2, and 4.

COMMENT 1

Foamex requests a change to increase the number of exhaust fans for the rebond foam production process from two exhaust fans to three exhaust fans. This change is requested to increase the rebond foam production at the facility. Foamex will be adding a second mold to the rebond foam production process and relocating the process approximately 60 feet to the northeast of its current location. The addition of a second mold will require a third exhaust fan to vent the emissions from the rebond process to the atmosphere. The modification to the rebond process will also include a recirculating dust filter/collection system, which does not vent to the atmosphere. The increase in rebond foam production requires an increase in TDI usage in the process from the current usage rate of 164 lbs/hr to 328 lbs/hr. Based on the TDI emission factor of 0.000028 lb emitted/lb used,

RECEIVED
JUN 10 1996
BUREAU OF
AIR REGULATION

presented in the permit application, this will result in an increase of TDI emissions from 0.0046 lbs/hr (0.02 TPY) to 0.0092 lbs/hr (0.04 TPY) from the rebond foam production process.

The modeling analysis has been revised to account for the modifications to the rebond foam production process, including 1) the increase in TDI emissions, 2) the addition of a third exhaust fan, and 3) the relocation of the rebond process. The modification only impacts the modeling results for TDI, since it is the only pollutant emitted from the rebond process exhaust fans. The results of the revised modeling analysis, presented below, show that the 8-hour and 24-hour maximum ground level concentrations for TDI are below the applicable FDEP ARC's.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP ARC ($\mu g/m^3$)
Toluene Diisocyanate	8-hour 24-hour	0.3 0.05	0.4 0.09

The revised pages, based on the requested changes, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 1 is given below.

From:

1. The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

1. The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and **three** roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

COMMENT 2

Foamex requests a change in the limits on the annual quantity of methylene chloride used at the facility, as stated in Specific Condition 2. An increase in the annual usage rate of methylene chloride from 551,192 lbs/yr (275.6 TPY) to 720,000 lbs/yr (360.0 TPY) is requested to maximize slabstock foam production in the short term, in preparation for the installation of an alternate manufacturing technology that will reduce the annual usage of methylene chloride as a blowing agent in the slabstock foam production process. The new manufacturing technology is expected to be in place and fully operational within five years. At that time the annual usage rate of methylene chloride is expected to be less than half of the requested usage rate of 720,000 lbs/yr (360.0 TPY), or less than 360,000 lbs/yr (180.0 TPY). Depending on the success of the implementation of the new process technology for the production of all grades of foam, the annual usage rate of methylene chloride may be reduced well below this level. However, it is difficult to establish a more reliable estimate at this time. Foamex will continue to reassess their ability to lower the usage of methylene chloride throughout the next five years, in order to commit to the lowest usage rate possible as a permit condition.

The requested annual increase only affects the annual average emission rates and does not affect the maximum hourly or daily emissions of methylene chloride from the slabstock foam production process. The dispersion modeling analysis has been revised based on the requested increase in the annual methylene chloride usage.

A risk assessment was also conducted to show that the increased methylene chloride emissions from the facility over a five year period and the reduced emissions after the five year period pose less than a one-in-one-million increased cancer risk over a lifetime (70 years). The risk assessment is presented as Attachment A to this letter. The basis of the risk assessment was to calculate the maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) and compare that concentration with an annual ambient reference concentration that represents a one-in-a-million cancer risk as a result of exposure over a lifetime. The FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$ is based on an ambient concentration that represents a one-in-one-million increased cancer risk as a result of exposure to that level over a lifetime (70 years). It was calculated by dividing 1.0E-6 by the EPA unit risk factor of 4.7E-7 $(\mu g/m^3)^{-1}$. As part of the risk assessment, additional modeling was conducted to determine the maximum off-site annual ground level concentration due to the reduced methylene chloride emissions after the five year period of increased emissions. The maximum off-site annual concentration due to the increased emissions for five years is 2.73 $\mu g/m^3$ and the maximum off-site annual concentration due the reduced methylene chloride usage is 1.38 $\mu g/m^3$. The maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) is calculated as follows:

$$[(2.73\ \mu g/m^3 \times 5\ \text{years}) + (1.38\ \mu g/m^3 \times 65\ \text{years})] \div 70\ \text{years} = 1.48\ \mu g/m^3$$

The resulting off-site annual methylene concentration averaged over a lifetime was then compared with the FDEP annual ARC for methylene chloride. The results, presented below, show that the maximum off-site annual ground level concentration of methylene chloride is less than the FDEP ARC and, therefore, the exposure to the estimated methylene chloride emissions from the facility over a lifetime pose less than a one-in-one-million increased cancer risk.

Compound	**Averaging Time**	**Maximum Off-Site Annual Ground Level Concentration Averaged Over a Lifetime ($\mu g/m^3$)**	**FDEP Annual ARC Representing a One-in-One-Million Increased Cancer Risk Over a Lifetime ($\mu g/m^3$)**
Methylene Chloride	Annual	1.48	2.0

The revised pages, based on the requested change, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

It should be noted that the USEPA is currently developing NESHAP regulations for the Flexible Polyurethane Foam Manufacturing Industry that will require Maximum Achievable Control Technology (MACT) for facilities that have emissions of methylene chloride or any other single hazardous air pollutant (HAP) greater than 10 tons per year. It is expected that these regulations will be promulgated within the next one to two years.

The requested change in Specific Condition 2, which includes the increase in annual TDI usage as discussed in Comment 2, is given below.

From:

2. The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 551,192 lbs/yr (275.6 TPY) during any twelve month period. The other chemicals used in the manufacturing processes at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

March 4, 1996
26005.F21.816
Mr. C. H. Fancy, P.E.
FDEP Bureau of Air Regulation
Page 6

280.13

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32	15.39
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

CLOSING

Should you require any additional information or have any questions regarding these issues please contact Kay Rykowski at (407)851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration Number 23374

JMW/JLT/jmw
26005W02.DOC/

Attachments:
- A. Revised pages to Volume I of Original Permit Application
- B. Revised pages to Volume II: Dispersion Modeling Analysis of Original Permit Application
- C. Output Listings from Revised Modeling (Appendixes D, E, F, I, and J of Volume II of Original Permit Application)

cc: Mr. Doug Terrill, Foamex, L.P., Orlando, Florida
Mr. Tom Burghardt, Foamex, L.P., Linville, Pennsylvania

Attachment A

Revised Pages to Volume I of Original Permit Application

a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three 50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication and processing operations throughout the rest of the facility before shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is

compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 3.3 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed.

2.2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the operation of the steam boiler are proposed.

2.2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 3.4 provides a listing of the individual heaters and the rated capacity of each heater.

2.2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions from the gluing process are vented to the atmosphere through the three ceiling exhaust fans located in the areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.2.1.

2.3 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

Table 2.1. Summary of Emission Sources
Foamex, L.P. - Orlando, Florida

Process Emission Source	Emission Point Number	Description
Slabstock Polyurethane Foam Production	1	Foam Line Stack
Slabstock Polyurethane Foam Production	2	Long Bun Storage Room Stack
Not operational as part of enhanced exhaust system	3	Exhaust Fan
Not operational as part of enhanced exhaust system	4	Exhaust Fan
Not operational as part of enhanced exhaust system	5	Exhaust Fan
Not operational as part of enhanced exhaust system	6	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	7	Exhaust Fan
Not operational as part of enhanced exhaust system	8	Exhaust Fan
Not operational as part of enhanced exhaust system	9	Exhaust Fan
Not operational as part of enhanced exhaust system	10	Exhaust Fan
Not operational as part of enhanced exhaust system	11	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	12	Exhaust Fan
Not operational as part of enhanced exhaust system	13	Exhaust Fan
Not operational as part of enhanced exhaust system	14	Exhaust Fan
Not operational as part of enhanced exhaust system	15	Exhaust Fan
Not operational as part of enhanced exhaust system	16	Exhaust Fan
Not operational as part of enhanced exhaust system	17	Exhaust Fan
Not operational as part of enhanced exhaust system	18	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	19	Exhaust Fan
Rebond Polyurethane Foam Production	20	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	21	Rebond Exhaust Fan
Tank Storage	22	Tank #10
Steam Boiler	23	Boiler Stack
Environmental Heating	24	Natural Gas Heaters

To calculate the maximum hourly usage rate of methylene chloride it is necessary to define the "worst case" maximum daily usage of methylene chloride. The "worst case" maximum daily methylene chloride usage is 14,000 lb/day.

The maximum hourly usage rate of methylene chloride is then calculated as follows:

Maximum hourly usage = 14,000 lb/day ÷ 6 hr/day = 2,333.33 lb/hr

The maximum annual usage of methylene chloride at the facility will be limited to 551,192 lbs/yr.

3.1.2 Rebond Polyurethane Foam Production

A summary of the typical material input and production rates for the Rebond process are provided in Table 3.2.

Table 3.2. Rebond Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Raw Materials:		
Scrap Foam	5,608	0
Polyol	459	0
TDI	164	0
Product:		
Rebond Foam Product	0	6,231

3.1.3 Tank Storage

As stated previously in Section 2.2.3 of this application, the Foamex facility includes eleven above ground storage tanks. The current estimated maximum annual material throughput for each tank is shown in Table 3.3 below.

Table 3.3. Tanks Storage Process Rates
Foamex, L.P. - Orlando, Florida

Tank Number	Product	Height (feet)	Diameter (feet)	Throughput (lbs/yr)
1	Polyol	35	12	Note 1
2	Polyol	35	12	Note 1
3	TDI	35	12	Note 2
4	Polyol	35	12	Note 1
5	Polyol	35	12	Note 1
6	TDI	35	12	Note 2
7	Empty	16	10.5	0
8	Polymer	16	10.5	1,000,000
9	Empty	35	12	0
10	Methylene Chloride	37 (long)	7	551,192
11	Empty	30 (long)	7	0

Note 1: Total Polyol Throughput = 15,000,000 lbs/yr
Note 2: Total TDI Throughput = 10,000,000 lbs/yr

3.1.4 Steam Boiler

The industrial boiler used for steam production is rated at 100 hp and is fired by natural gas. The boiler is used to convert an average of 1,570 gallons of water to steam each day for the Rebond process. The maximum heat input for the boiler is 4.2 mmBtu/hr with a maximum natural gas consumption rate of 4,200 cf/hr. The maximum operating schedule for the boiler is 8760 hrs/yr.

3.1.5 Environmental Heating

There are thirteen indirect natural gas fired heaters at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The total maximum heat input for the heaters is 1.85 mmBtu/hr, with a maximum natural gas usage rate of 1850 cf/hr. On an average basis, the natural gas usage rate is 200 cf/hr. Table 3.4 provides a listing of the individual heaters and heat input rates.

Table 3.4. Indirect Fired Heaters Process Rates
Foamex, L.P. - Orlando, Florida

Heater Number	Manufacturer	Model Number	Operational?	Maximum Heat Input (Btu/hr)
1	Bryant	200-341	Yes	200,000
2	Bryant	200-341	No	200,000
3	Hastings	GF200XE	Yes	200,000
4	Hastings	GF200XE	No	200,000
5	Hastings	GF200XE	Yes	200,000
6	Hastings	GF200XE	Yes	200,000
7	Hastings	GF200XE	Yes	200,000
8	Hastings	GF200XE	Yes	200,000
9	Hastings	GF200XE	Yes	200,000
10	Hastings	GF200XE	Yes	200,000
11	Bryant	200-341	No	200,000
12	Bryant	200-341	No	200,000
13	Peereless	1067	Yes	250,000
TOTAL (operational heaters only)				1,850,000

3.1.6 Foam Fabrication Operations

During Foam Fabrication Operations, the foam buns manufactured during the Slabstock process are cut and glued according to customer specifications. Approximately 3.1 lbs/hr of glue is used during these operations. The maximum annual usage rate of glue at the facility is 4,600 lb/yr, or 2.3 tons/yr.

3.2 Emissions Calculations

3.2.1 Slabstock Polyurethane Foam Production

3.2.1.1 Methylene Chloride

As stated in Section 3.1.1 of this application, methylene chloride represents the only significant emissions associated with this process. Currently, it is the only blowing agent used. In this process, all of the blowing agent used is emitted to the atmosphere and does not end up in the foam product. Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. The total uncontrolled process emissions of methylene chloride on an annual basis can, therefore, be estimated directly from the annual methylene chloride usage rate in Section 3.1.1.

Maximum annual methylene chloride usage = 551,192 lbs/yr

Maximum annual methylene chloride emissions = 551,192 lbs/yr ÷ 2,000 lbs/ton
= 275.6 tons/yr

The values shown above represent the total methylene chloride emissions from the slabstock foam production process. However, these emissions are distributed between each of the two stacks serving the process, the Foam Line Stack and the Long Bun Storage Room Stack, and the three exhaust ceiling exhaust fans serving the Foam Fabrication Operations area. Both short term and long term emission rates must be calculated for the Foam Line Stack and Long Bun Storage Room Stack. Emissions calculations for the Foam Fabrication Operations are included under that heading in Section 3.2.6. Long term or annual emissions from the Foam Line and Long Bun Storage Room can be calculated by multiplying the distribution factors for each (60% and 35%, respectively) by the total maximum annual emissions specified above.

Foam Line Stack:

Maximum annual methylene chloride emissions = 551,192 lbs/yr x 0.60
= 330,715.2 lb/yr

Maximum annual methylene chloride emissions = 330,715.2 lbs/yr ÷ 2,000 lbs/ton
= 165.36 tons/yr

Long Bun Storage Room Stack:

Maximum annual methylene chloride emissions = 551,192 lbs/yr x 0.35
= 192,916.85 lb/yr

Maximum annual methylene chloride emissions = 192,916.85 lbs/yr ÷ 2,000 lbs/ton
= 96.46 tons/yr

The first step in developing an estimate of the maximum hourly emission rate for the Foam Line and Long Bun Storage Room is to define the "worst case" maximum daily methylene chloride usage. For this purpose, the "worst case" daily usage of methylene chloride, as defined in Section 3.1.1 of this application, is 14,000 lbs/day over six hours of operation (2,333.33 lb/hr). Assuming that 60% of this quantity is released during the pour period in the foam line enclosure as the foam travels along the process line conveyor before it reaches the Long Bun Storage Room, the Foam Line Stack emits a total of 8,400 pounds of methylene chloride over the six hour pour period. As the buns enter the Long Bun Storage Room, the remaining methylene chloride which is contained in the foam material begins to be released. Assuming that 35% of the methylene chloride used during the pour is released in the Long Bun Storage Room during the cure period, a total of 4,900 pounds of methylene chloride is emitted from the Long Bun Storage Room Stack. The 5% (700 pounds) of the methylene chloride remaining after the cure period in the foam product after it is removed from the Long Bun Storage Room is emitted during the foam fabrication operations through the three ceiling exhaust fans located in the foam fabrication areas.

As stated previously, the Long Bun Storage Room emissions decay at an exponential rate over the foam cure period. Appendix A provides a detailed analysis of the actual emission rate profile for the Long Bun Storage Room. However, for emission calculation purposes, a more simple approach representing a worst case scenario is used. This approach ignores the decay profile and the foam cure period and instead assumes that the total quantity of emissions is released at a steady rate during the pour period only. Because the length of the pour period is shorter than the cure period, the resulting maximum short term emission rate is higher. Thus, this approach represents a worst case scenario. The following provides a simple summary of this mass balance.

Maximum methylene chloride usage	= 14,000 lbs
Maximum Foam Line Stack methylene chloride emissions	= 8,400 lbs
Maximum Long Bun Storage Room Stack methylene chloride emissions	= 4,900 lbs
Maximum methylene chloride emissions from three exhaust fans	= 700 lbs
Maximum Total methylene chloride emissions	= 14,000 lbs

Using the worst case assumption that the total emissions for both the Foam Line Stack and Long Bun Storage Room Stack occur during the six hour pour period, the maximum hourly emission rates are calculated as follows:

Foam Line Stack:

Maximum hourly methylene chloride emissions = 8,400 lbs ÷ 6 hrs
= 1,400 lb/hr

Long Bun Storage Room Stack:

Maximum hourly methylene chloride emissions = 4,900 lbs ÷ 6 hrs
= 816.67 lb/hr

As stated above, emissions from the three exhaust fans during foam fabrication operations are included under the heading Foam Fabrication Operations in Section 3.2.6.

3.2.1.2 Toluene Diisocyanate

As stated above, the Slabstock process involves the mixture of various process chemicals along with an auxiliary blowing agent to produce polyurethane foam. The calculations presented above provide an estimate of the emissions of the auxiliary blowing agent, methylene chloride. All of the methylene chloride used is volatilized and thus emitted from the process. The remaining process chemicals listed in the mass balance, shown in Section 3.1.1, combine to form the foam product. In 1991, Foamex conducted a stack test for emissions of methylene chloride and toluene diisocyanate (TDI). The test results, included in Appendix B, revealed that a small quantity of TDI is emitted from the process. Table 3.5 provides a summary of the test results.

version 1.0, which is based on the calculation procedures specified in AP-42 section 12. The calculations were conducted based on the maximum annual methylene chloride throughput for the facility of 551,192 lb/yr. The calculations represented in Appendix C were conducted based on the existing tank design, which includes a breather vent with no pressure setting. Thus breathing losses, also referred to as standing losses, are not limited in any way. The following provides a summary of the results of the calculations. However Foamex proposes to install a pressure relief vent for this tank such that standing losses would be minimized.

Total standing losses	=	4992.73 lbs/yr
Total working losses	=	844.16 lbs/yr
Maximum annual emissions	=	(4992.73 lbs/yr) + (844.16 lbs/yr)
	=	5836.89 lbs/yr
	=	(5836.89 lbs/yr) ÷ (2000 lbs/ton)
	=	2.9 tons/yr
Annual average emission rate	=	(5836.89 lbs/yr) ÷ (8760 hrs/yr)
	=	0.66 lbs/hr

3.2.4 Steam Boiler

Emissions from the Steam Boiler are generated through natural gas combustion. Appendix D provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.6 provides a summary of the results of these calculations.

Table 3.6. Steam Boiler Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.021	0.092
Sulfur dioxide	0.0025	0.011
Nitrogen oxide	0.59	2.58
Carbon monoxide	0.147	0.64
Total hydrocarbons	0.013	0.055

3.2.5 Environmental Heating

Emissions from Environmental Heating are generated through natural gas combustion. Appendix E provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.7 provides a summary of the results of these calculations.

Table 3.7. Environmental Heating Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.00925	0.00185
Sulfur dioxide	0.00111	0.000222
Nitrogen oxide	0.259	0.0518
Carbon monoxide	0.06475	0.01295
Total hydrocarbons	0.00555	0.00111

3.2.6 Foam Fabrication Operations

3.2.6.1 Methylene Chloride

As stated above, after the foam bun cure period ends 5% of the total methylene chloride used is still retained in the foam buns. This quantity is not released until the buns leave the Long Bun Storage Room and are cut or processed during Foam Fabrication operations. This remaining 5% is emitted from the foam into the areas isolated for foam fabrication operations and discharged to the atmosphere through the three ceiling exhaust fans located in these areas. Further, since an inventory of foam product is always present in the foam fabrication areas, these emissions are released at a constant rate throughout the year. The maximum annual emissions and maximum hourly emission rates for these emissions from the three foam fabrication operations exhaust fans are calculated as follows.

Maximum annual emissions	=	551,192 lbs/yr x 0.05
	=	27,559.6 lbs/yr
	=	13.78 tons/yr
Maximum hourly emissions	=	27,559.6 lbs/yr ÷ 8,760 hr/yr
	=	3.15 lb/hr

In the gluing process Foamex uses a methylene chloride based glue, therefore, methylene chloride emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum methylene chloride content of the glue is 70% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the methylene chloride emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.70
	=	2.17 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.70 ÷ 2,000 lbs/ton
	=	1.61 tons/yr

The total methylene chloride emissions from the foam fabrication operations are calculated as follows:

Maximum hourly emissions	=	3.15 lb/hr + 2.17 lbs/hr

	=	5.32 lbs/hr
Maximum annual emissions	=	13.78 tons/yr + 1.61 tons/yr
	=	15.39 tons/yr

3.2.6.2 1,1,1-Trichloroethane

In the gluing process Foamex may also use a 1,1,1-trichloroethane based glue, therefore, 1,1,1-trichloroethane emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum 1,1,1-trichloroethane content of the glue is 81% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the 1,1,1-trichloroethane emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.81
	=	2.5 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.81 ÷ 2,000 lbs/ton
	=	1.86 tons/yr

3.2.7 Emissions Summary

A summary of the maximum hourly and annual emission rates for each process is provided in Table 3.8. Emission rates calculated on an 8-hour average and 24-hour average are also provided in Volume II of this application, the Dispersion Modeling Analysis, which is submitted under separate cover.

Table 3.8. Emissions Summary
Foamex, L.P. - Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/hr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	2216.67	261.82	N/A	N/A	2216.67	261.82
	Tank Storage	0.66	2.92	N/A	N/A	0.66	2.92
	Foam Fabrication	5.32	15.39	N/A	N/A	5.32	15.39
	Subtotal	2222.65	280.13	N/A	N/A	2222.65	280.13
1,1,1-Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.404	N/A	N/A	0.37	0.404
	Rebond Process	0.0046	0.02	N/A	N/A	0.0046	0.02
	Subtotal	0.3746	0.424	N/A	N/A	0.3746	0.424
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2).
2. Reference applicable emission standards and units (e.g. Rule 17-2.6000(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input).
3. Calculated from operating data and applicable standard.
4. Emission, if source operated without control (See Section V, Item 3).

3.3 Emission Stack Data

Table 3.9 provides a summary of the geometry and flow characteristics for each stack located at the Foamex, L.P. facility.

Table 3.9. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Water Vapor Content
1	Foam Line Stack	125	33.75	30,000	80	80.481	Ambient
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	Ambient
3	Exhaust Fan		Not operational as part of enhanced exhaust system				
4	Exhaust Fan		Not operational as part of enhanced exhaust system				
5	Exhaust Fan		Not operational as part of enhanced exhaust system				
6	Exhaust Fan		Not operational as part of enhanced exhaust system				
7	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
8	Exhaust Fan		Not operational as part of enhanced exhaust system				
9	Exhaust Fan		Not operational as part of enhanced exhaust system				
10	Exhaust Fan		Not operational as part of enhanced exhaust system				
11	Exhaust Fan		Not operational as part of enhanced exhaust system				
12	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
13	Exhaust Fan		Not operational as part of enhanced exhaust system				
14	Exhaust Fan		Not operational as part of enhanced exhaust system				
15	Exhaust Fan		Not operational as part of enhanced exhaust system				
16	Exhaust Fan		Not operational as part of enhanced exhaust system				
17	Exhaust Fan		Not operational as part of enhanced exhaust system				
18	Exhaust Fan		Not operational as part of enhanced exhaust system				
19	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

Attachment B

Revised Pages to Volume II: Dispersion Modeling Analysis of Original Permit Application

2.0 PROJECT DESCRIPTION

Two basic processes are used at the Foamex facility to manufacture polyurethane foam product: Slabstock Polyurethane Foam Production and Rebond Polyurethane Foam Production. These processes are used to manufacture foam products of various density, color and thickness. While the basic processes remain the same, the proportions of raw materials are modified slightly for each batch to achieve the desired product specifications. In addition to the two manufacturing processes, support operations at the facility include tank storage of process chemicals, steam boiler operation, environmental heating, and foam fabrication operations.

2.1 Slabstock Polyurethane Foam Production

In the Slabstock process, a high pressure mixing head and metering pumps are used to mix the specific raw materials required for each product. These raw materials include toluene diisocyanate (TDI), polyol, water, catalysts, surfactants, additives (such as pigments or flame retardants), and methylene chloride, an auxiliary blowing agent. The mixed raw materials are discharged into a trough where the mixture begins to react and flows down a tunnel area. Heat generated by the exothermic reaction volatilizes the methylene chloride thus allowing the foam to reach a predetermined density. The foam begins releasing methylene chloride at this point. The methylene chloride serves to reduce the foam density, or soften it, and to provide cooling of the mixture as it discharges energy during the exothermic reaction. The foam slab travels through the tunnel via a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three

50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this analysis and the permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 1 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Methylene chloride emissions from Tank 10 were calculated using EPA's Storage Tank Emissions Calculation program, TANKS version 1.0, and are presented in the permit application. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed. Based on previous submittals to FDEP, methylene chloride emissions from Tank 10 are not addressed in this dispersion modeling analysis.

2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the

operation of the steam boiler are proposed. Emissions from the steam boiler are not addressed in this dispersion modeling analysis.

2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 2 provides a listing of the individual heaters and the rated capacity of each heater. Emissions from the heaters are not addressed in this dispersion modeling analysis.

2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions of methylene chloride and 1,1,1-trichloroethane from the gluing process are analyzed in this dispersion modeling analysis. The emissions from the gluing process are vented to the atmosphere through the three ceileing exhaust fans located in areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.1.

2.7 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

DRAFT

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

Operation/chemical	Emissions lbs/hr	Emissions TPY
I. Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II. Foam Line Stack/ methylene chloride	1,400	**216**
III. Long Bun Storage Room Stack/ methylene chloride	816.7	**126**
IV. Foam Fabrication Operations/ methylene chloride	**6.3**	**19.6**
1,1,1-trichloroethane	2.5	1.86
V. Rebond Polyurethane Foam Production/ toluene diisocyanate	**0.0092**	**0.04**
VI. Tank Storage (Tank No. 10) methylene chloride	**0.70**	**3.03**

VII. Steam Boiler — Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)

VIII. Environmental Heating — Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)

SPECIFIC CONDITION NO. 5

From:

To confirm the emission factors used in the application, the permittee shall measure the emissions from both slabstock process stacks for methylene chloride by EPA Method 18, as described in 40 CFR 60, Appendix A. If the measured emission factors are significantly different from the ones used in the application, the applicant shall remodel the emissions from the facility using the emission factors established by the stack test to confirm that the Acceptable Ambient Concentration from methylene chloride is not exceeded. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then sources

DRAFT

may be tested at less than capacity (i.e. less than 90% of the maximum operating rate allowed by this permit); in this case, subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. The stack test and modeling results hall be submitted to the Department with the application for permit to operate required by Specific Condition No. 8. (Rule 62-4.070, F.A.C.)

To:

To confirm the emission factors used in the application, the permittee shall measure the emissions from both slabstock process stacks for methylene chloride by EPA Method 18, as described in 40 CFR 60, Appendix A, **prior to January 1, 1997.** If the measured emission factors are significantly different from the ones used in the application, the applicant shall remodel the emissions from the facility using the emission factors established by the stack tests **and update the Risk Assessment for** methylene chloride. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then sources may be tested at less than capacity (i.e. less than 90% of the maximum operating rate allowed by this permit); in this case, subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. The stack test and modeling results hall be submitted to the Department with the application for permit to operate required by Specific Condition No. 8. (Rule 62-4.070, F.A.C.)

A copy of this letter shall be attached to permit No. AC 48-214902 and shall become a part of that permit.

Sincerely,

Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/wh/t

Florida Department of
Environmental Protection

Memorandum

To: Clair Fancy

From: Willard Hanks WH

Date: July 30, 1996

Subject: Modification of Permit
Foamex L.P.

Attached for your approval is a proposed modification to the construction permit for Foamex's flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida.

The modification will:

- o allow the permittee to increase methylene chloride emissions from 280 to 365 TPY for a period of 5 years,
- o extended the permit to allow time to install a carbon dioxide system which will replace some of the methylene chloride used in the process,
- o after the installation of the carbon dioxide system (by the end of the 5 year period), the methylene chloride emissions will be reduced to a maximum of 180 TPY,
- o the rebond foam operation will be relocated to an adjacent area and the production will be increased by the addition of another mold and exhaust fan.

Modeling results of the reconfigured plant shows the Ambient Reference Concentration for methylene chloride is exceeded during the five year period of high emissions. Theoretically, a lifetime of exposure (70 years) to the maximum ambient air concentration resulting from 360 TPY of methylene chloride emissions from this facility would increase the cancer risk by 1.3 in a million. For maximum emission rates of 360 TPY for 5 years and 180 TPY thereafter, as limited by the proposed modification, the lifetime increase in cancer risk is less than 1 in a million.

I recommend your approval and signature of the proposed modification.

CHF/wh/t

Attachments

P 339 251 131

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to Doug Terrill	
Street & Number Foamex LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date AC48-2149023 7-31-96 0950235-003-AC	

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrill
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32821

4a. Article Number
P 339 251 131

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
8-2-96

5. Signature (Addressee)
Antonello Tate

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

...CEIPT

Thank you for using Return Receipt Service.

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

June 28, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Wolber, Project Scientist
Harding Lawson Associates
4763 South Conway Road
Orlando, Florida 32812

Dear Mr. Wolber:

Re: Foamex, L.P.

Confirming our June 12 conversation, the Department will need an application fee before we can process the request to modify the Foamex air permit. For a modification resulting in an 85 TPY increase in air pollutant emissions, the fee is $4,500.

Also, Specific Condition No. 5 of permit No. 48-214902 for this facility required stack tests to confirm the emission factors used in the application. Has this condition been complied with?

If you have any questions on these matters, please call me at (904) 488-1344.

Sincerely,

Willard Hanks

Willard Hanks
Review Engineer

WH/h

cc: Raphael Rodriguez, Foamex, L.P.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

P 339 251 118

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to John Walber	
Street & Number Foamex, LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	6-27-96

PS Form **3800**, April 1995

Fold at line over top of envelope to

Is your **RETURN ADDRESS** completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
John Walber, P.S.
Foamex, LP
4763 S. Conway Rd
Orlando, Fl 32812

4a. Article Number
P 339 251 118

4b. Service Type
- ☐ Registered
- ☐ Insured
- ☒ Certified
- ☐ COD
- ☐ Express Mail
- ☐ Return Receipt for Merchandise

7. Date of Delivery
Foley 7/1/96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

FLORIDA

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

State of Florida
Department of Environmental Protection
Notice of Permit Modification

In the Matter of an
Application for Permit Modification

DEP File No. AC 48-214902A
County: Orange

Mr. Douglas L. Terrill
Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32837

Enclosed is a letter that modifies Permit Number AC 48-214902 for for your flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32837. The permit modification will allow an increase of 19 tons per year in methylene chloride emissions, a reconfiguration of the foam fabrication operation that will reduce the number of ventilation fans, and an extension of the expiration date of this permit. This permit modification is issued pursuant to Section 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 14 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344

Foamex, L.P.

Permit No. AC 48-214902A

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT MODIFICATION and all copies were mailed by before the close of business on 6-21-96 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kim Tober — Clerk 6-21-96 — Date

Copies furnished to:

L. Kozlov, CD
D. Nester, OCEPD
K. Rykowski, HLA

FINAL DETERMINATION

Foamex, L.P.
AC 48-214902A

The Intent to Issue an air construction permit modification to Foamex, L.P. to increase methylene chloride emissions from their flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida was distributed on May 3, 1996. The Notice of Intent to Issue was published in the Orlando Sentinel on May 21, 1996.

The only comments received in response to the public notice was from the applicant. Foamex requested the allowable methylene chloride emissions from the facility and the slabstock polyurethane foam process be clarified. The Department agreed to this request and reworded the changes to proposed Specific Condition No. 2.

The final action of the Department will be to issue the construction permit modification as proposed except for the change discussed above.

FLORIDA

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

June 19, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas L. Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit
Permit No. AC 48-214902A

The Department is in receipt of your March 5 and March 15 letters requesting the permit for your flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821, be modified. The requested modifications are to allow a 19 TPY increase in methylene chloride emissions, to reconfigure the foam fabrication operation so that 14 of the roof ventilation fans will no longer be needed, and to extend the expiration date of the permit so that a carbon dioxide system which will replace part of the methylene chloride used in the process can be installed. Part of these requests is acceptable. The Department will require a permit to operate the plant before the carbon dioxide system is fully operational. In response to your request, permit No. AC 48-214902 is modified as follows:

EXPIRATION DATE

From: May 15, 1996
To: May 15, 1997

SPECIFIC CONDITION NO. 1

From:

The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling

50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

The enhanced exhaust systems shall **meet or exceed the following specifications.** The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; **three** roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

SPECIFIC CONDITION NO. 2

From:

The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 551,192 pounds (275.6 tons) during any twelve month period. The **other** chemicals used **in the manufacturing process** at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITION NO. 4

From:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

	Emissions	
Chemicals	lbs/hr	TPY
methylene chloride	2,222	261
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.375	0.42

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.7	89.8
IV.	Foam Fabrication Operations/		
	methylene chloride	5.1	14.4
	1,1,1-trichloroethane	2.5	1.86

V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.017
VI.	Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	2,223	**280**
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.375	0.42

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II.	Foam Line Stack/ methylene chloride	1,400	**165.36**
III.	Long Bun Storage Room Stack/ methylene chloride	816.7	**96.5**
IV.	Foam Fabrication Operations/ methylene chloride	**5.3**	**15.4**
	1,1,1-trichloroethane	2.5	1.86

V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

Specific Condition No. 8

From:

An application for an operation permit shall be submitted to the Department's Central District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit. (Rules 62-4.055 and 62-4.220, F.A.C.)

To:

The permittee shall comply with the application requirements in Rule 62-213.420, F.A.C., for Title V operation permits.

A copy of this letter shall be attached to permit number AC 48-214902 and shall become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/wh/t

Enclosures

BEST AVAILABLE COPY

TRANSMITTAL

To: Mr. Willard Hanks
Mr. C.H. Fancy, Jr.
FDEP - Tallahassee

From: Joe Tessitore
Kay Rykowski
HLA Orlando

Date: March 5, 1996

Subject: Foamex, Orlando Facility

Project Number: 26005.F21.816

RECEIVED
MAR 06 1996
BUREAU OF
AIR REGULATION

Please find enclosed:

- A letter request for amendment to Permit AC48-214902 for the Foamex foam manufacturing facility in Orlando;
- Attachment A - Revised Pages to Volume I of the Original Permit Application (1 copy);
- Attachment B - Revised Pages to Volume II: Dispersion Modeling Analysis, of the Original Permit Application (1 copy)
- Attachment C - Output Listings from Revised Modeling (Appendixes D,E,F,I and J of Volume II of Original Permit Application) (1 copy)
- Check No. 487130 in the amount of $1000.00 for applicaton processing fee.

As we discussed during our meeting on February 22, this amendment is requested to allow an increase in production at the facility, in preparation for installation of a new manufacturing technology. The proposed increase in methylene chloride usage results in an increase in the maximum annual groundlevel concentration of approximately 10%, however this maximum concentration does not exceed the FDEP Acceptable Ambient Concentration.

If you have any questions regarding this submittal, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

pkr\trans001.doc

Attachments

cc: Doug Terrill, Foamex; Orlando, Florida
Tom Burghardt, Foamex; Linwood, Pennsylvania

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

Harding Lawson Associates

March 4, 1996

26005.F21.816

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
MAR 06 1996
BUREAU OF
AIR REGULATION

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

INTRODUCTION

This letter is to request an amendment to Construction Permit AC48-214902, issued to Foamex, L.P. This letter presents a summary of the requested changes to Specific Conditions 1, 2, and 4 issued by FDEP. As discussed with you during our meeting on February 22, the requested changes include an increase in the annual methylene chloride usage and a modification to the enhanced exhaust system for the foam fabrication operations. This amendment is requested to allow Foamex to increase production at their Orlando facility in the short term, in preparation for future installation of an alternate manufacturing technology that will greatly reduce methylene chloride emissions.

As discussed in the following comments and supported by the attachments, the predicted maximum ground level concentration for methylene chloride and 1,1,1-trichloroethane do not exceed the FDEP Acceptable Ambient Air Concentrations (AAAC) as a result of the requested changes to Specific Conditions 1, 2, and 4.

COMMENT 1

Foamex requests a change to reduce the number of exhaust fans for the foam fabrication operations from seventeen exhaust fans to three exhaust fans. As discussed in Foamex's First and Second Progress Reports (June 30, 1995 and January 31, 1996, respectively), this change is requested to minimize energy consumption and capital and operating costs. The foam fabrication operations will be isolated to smaller areas, thereby reducing the number of exhaust fans required to exhaust the foam fabrication emissions to only three fans rather than seventeen as outlined in the original permit application. The fourteen existing roof exhaust fans which will not be used for the foam fabrication exhaust system will be blocked off. The three fans to be used for the foam fabrication operations exhaust system are source numbers 7, 12, and 19 as identified in the original permit application and in the attached supporting documentation.

The new exhaust fan configuration has the minimal effect on the dispersion modeling analysis of slightly concentrating the foam fabrication operations emissions to the area of the three exhaust fans

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

as opposed to these emission being spread out over the area of the seventeen fans as originally proposed. The dispersion modeling has been revised to account for the new exhaust fan configuration. This change only impacts the modeling results for methylene chloride and 1,1,1-trichloroethane, the only pollutants emitted from the foam fabrication exhaust fans. The results of the revised modeling analysis, presented below, show that the 8-hour and 24-hour maximum ground level concentrations for methylene chloride and 1,1,1-trichloroethane are below the applicable FDEP AAAC's. The annual methylene chloride ground level concentration will be discussed in Comment 2.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour 24-hour	1,538.9 250.8	1,740 417.6
1,1,1-Trichloroethane	8-hour 24-hour	10.1 6.7	38,200 9,168

The revised pages, based on the requested changes, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 1 is given below.

From:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities

meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

COMMENT 2

Foamex requests a change in the limits on the annual quantity of methylene chloride used at the facility stated in Specific Condition 2. An increase in the annual usage rate of methylene chloride from 513,090 lbs/yr (256.6 TPY) to 551,192 lbs/yr (275.6 TPY) is requested to maximize foam production without exceeding the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. The dispersion modeling analysis has been revised based on the requested increase in the annual methylene chloride usage limit and the requested change in the foam fabrication operations exhaust system as discussed in Comment 1. The requested annual increase only affects the annual average emission rates and does not affect the maximum hourly or daily emissions of methylene chloride. The results of the revised modeling analysis, presented below, show that the maximum annual ground level concentration for methylene chloride does not exceed the FDEP annual AAAC for methylene chloride.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	Annual	2.09998	2.1

The revised pages, based on the requested change, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 2 is given below.

From:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 551,192 lbs/yr (275.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

COMMENT 3

As a result of the requested increase in annual methylene chloride usage discussed in Comment 2 above, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The calculations supporting this change are provided in the attached revised pages of Volume I of the permit application. The requested change in Specific Condition 4 is given below.

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

   AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.43	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	89.79
IV.	Foam Fabrication Operations/ methylene chloride	5.1	14.41
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

Florida Department of
Environmental Protection

Memorandum

I signed

To: Howard L. Rhodes

Thru: Clair Fancy CHF

From: Willard Hanks WMH

Date: September 3, 1996

Subject: Modification of Permit
Foamex L.P.

Attached for your approval and signature is a letter that will modify the construction permit for Foamex's flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida.

The modification will:

- o allow the permittee to increase methylene chloride usage in the Slabstock Polyurethane Process from 280 to 365 TPY for a period of 5 years,
- o extended the permit to allow time to install a carbon dioxide system which will replace some of the methylene chloride used in the process,
- o by the end of the 5 year period, the methylene chloride usage in the Slabstock Polyurethane Process will be reduced to a maximum of 180 TPY,
- o the rebond foam operation will be relocated to an adjacent area and the production will be increased by the addition of another mold and exhaust fan.

Modeling results of the reconfigured plant shows the Ambient Reference Concentration for methylene chloride is exceeded during the five year period of high emissions. The health risk for this emission rate is estimated to be 1.34 in a million. After the methylene chloride emissions are reduced to 180 TPY, the Ambient Referenced Concentrations are met and the health risk is less than one in a million.

During the public notice period, the applicant submitted comments. Their comments were that the modification should be issued in the name of the current plant manager, that the limits in the permit were on methylene chloride usage instead of emissions, and that the modified Rebond Foam Process would contain 3 molds after the addition on the new one. The proposed modification was revised to incorporate these changes.

I recommend your approval and signature of the permit modification.

CHF/wh/t

Attachments

P 339 251 149

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Rafael Rodriguez	
Street & Number Foanex LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 9-6-96 AC48-2149028 0950225-003-AC	

PS Form **3800**, April 1995

Is your **RETURN ADDRESS** completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Rafael Rodriguez
Foanex LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
P 339 251 149

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
9-9-96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Antoinette [illegible]

PS Form **3811**, December 1991 ★U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Harding Lawson Associates

RECEIVED
SEP 3 1996
BUREAU OF
AIR REGULATION

August 22, 1996

26005.F21.816

Mr. Willard Hanks
Review Engineer
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Mail Station 5505
Tallahassee, Florida 32399-2400

Foamex, L.P., Orlando
Proof of Publication of Public Notice of Intent to Issue
Permit No. AC 48-214902B
AIRS I.D. No. 0950225-003-AC

Dear Mr. Hanks:

Per our phone conversation Thursday morning (8/22), please find attached the revised "Proof of Publication" of the "Public Notice of Intent to Issue Permit Modification" for Foamex, L.P. This revised version correctly references the permit number, AC 48-214902B. Please disregard the original version which referenced HLA's internal project number for Foamex, L.P.

Please do not hesitate to contact us if you any questions or comments or if you require any additional information.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

JMW/tbm/26005W38.DOC

cc: Mr. Alan Zahm, FDEP Central District
Mr. Dennis Nester, OCEPD
Mr. Tom Burghardt, Foamex International, Linwood, PA
Mr. Tony Grosso, Foamex International, Linwood, PA
Mr. Rafael Rodriguez, Foamex, L.P., Orlando
Ms. Kay Rykowski, HLA, Orlando

BEST AVAILABLE COPY

The Orlando Sentinel

Published Daily
$213.68

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared BEVERLY C. SIMMONS, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF in the matter of DRAFT PERMIT NO. AC 48-214902B in the ORANGE Court, was published in said newspaper in the issue; of 08/10/96

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Beverly C. Simmons

The foregoing instrument was acknowledged before me this 22 day of August, 19 96, by BEVERLY C. SIMMONS, who is personally known to me and who did take an oath.

Sheri L. Miller

(SEAL)

SHERI L. MILLER
My Comm Exp. 5/01/00
Bonded By Service Ins
No. CC562241
[ ] Personally Known [ ] Other I. D.

NOTARY PUBLIC STATE OF FLORIDA

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No. AC 48-214902B (0950225-003-AC)
Foamex L.P. Flexible Polyurethane Foam Manufacturing Plant
Orange County

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification to the air construction permit for Foamex L.P., 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821. The modification will allow methylene chloride emissions at the facility to increase from 280 to 365 tons per year (TPY) for up to 5 years. After period, the methylene chlo ride emissions cannot exceed@$ 180 TPY or the applicable Maxi @issuance action for a period of 14 (fourteen) days from the date of publication of the Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received results in a significant change in the DRAFT Permit Modification, the Department will issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action

statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

The complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except legal holidays, at:
Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
FAX: 904/922-6979
COR1084952 AUG.10,1996

Harding Lawson Associates

August 8, 1996

26005.F21.816

RECEIVED
AUG 12 1996
BUREAU OF
AIR REGULATION

Mr. Willard Hanks
Review Engineer
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Foamex, L.P., Orlando
DRAFT Modification of Permit & Public Notice of Intent to Issue
Permit No. AC 48-214902B
AIRS I.D. No. 0950225-003-AC

Dear Mr. Hanks:

Foamex, L.P. (Foamex) and Harding Lawson Associates (HLA) have received and reviewed the subject DRAFT Modification of Permit and Public Notice of Intent to Issue for Foamex's Orlando Facility. We have four minor comments regarding the draft modification. These comments do not affect or change the emissions as presented in the draft modification or public notice.

COMMENT 1

Rafael Rodriguez is the new Plant Manager of Foamex's Orlando facility. Please address the final Modification of Permit, and all future correspondence, to Mr. Rodriguez.

COMMENT 2

The rebond foam production process at the facility currently consists of two roof exhaust fans serving two molds. Foamex will be adding a third mold and fan to this process. Foamex requests that Specific Condition No. 1, as presented on Page 2 of the draft modification, be corrected to read as follows:

> "... and **three** roof exhaust fans **serving <u>three</u> molds in the rebond foam production process** ..."

COMMENT 3

Specific Condition No. 2 has always limited methylene chloride usage, not emissions. As presented in the draft modification, this condition limits methylene chloride usage prior to May 31, 2001, and limits methylene chloride emissions after May 31, 2001. Even though all of the methylene chloride used in the Slabstock Process is emitted, Foamex requests, that to be consistent, Specific Condition No. 2 in the modification be revised to limit methylene chloride usage only. The following revised wording is suggested:

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

"The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed **720,000** pounds (**360.0** tons) during any twelve month period **from the date of this amendment until May 31, 2001. This time is needed to install the alternate manufacturing technology that will replace part of the methylene chloride blowing agent with carbon dioxide. After May 31, 2001, methylene chloride usage as a blowing agent shall not exceed 360,000 pounds (180.0 tons) during any 12 month period or methylene chloride emissions shall not exceed the standard established by an applicable Maximum Achievable Control Technology (MACT) determination, whichever is most restrictive. ...**"

COMMENT 4

The emissions contained in Specific Condition No. 4 of the permit are presented as estimated emissions for inventory purposes and are not presented as limits. In the draft modification, the footnote to the total estimated annual methylene chloride emissions limits methylene chloride emissions after May 31, 2001, to 180 TPY or MACT, whichever is most restrictive. Since the methylene chloride emissions are limited by the usage limits imposed by Specific Condition No. 2 and Specific Condition No. 4 presents all other emissions as estimated emissions, Foamex requests that the footnote be revised to present the methylene chloride emissions after May 31, 2001 as estimated emissions. The following revised wording is suggested:

"***After May 31, 2001, estimated emissions do not exceed 180 TPY or MACT, whichever is most restrictive.**"

CLOSING

As previously stated, the comments above do not affect the emissions as presented in the draft modification and public notice. Therefore, upon confirmation from you that these comments do not constitute a significant change in the DRAFT Modification of Permit and will not require FDEP to reissue the draft modification package, we will go ahead with the publication of the Public Notice of Intent to Issue.

Please do not hesitate to contact us if you any questions or comments or if you require any additional information.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal

JMW/JLT/tbm/26005W34.DOC

cc: Mr. Alan Zahm, FDEP Central District
Mr. Dennis Nester, OCEPD
Mr. Tom Burghardt, Foamex International, Linwood, PA
Mr. Tony Grosso, Foamex International, Linwood, PA
Mr. Rafael Rodriguez, Foamex, L.P., Orlando
Ms. Kay Rykowski, HLA, Orlando

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

July 30, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas L. Terrill
Plant Manager
Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: DRAFT Modification of Permit
Permit No. AC 48-214902B (0950225-003-AC)

Enclosed is one copy of the DRAFT Permit Modification for the changes to the air construction permit No. AC48-214902A for your Orlando, Florida flexible polyurethane foam manufacturing plant. The Intent to Issue and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit.

Please submit any comments you may wish to have considered concerning the Department's proposed action to the Bureau of Air Regulation, New Source Review Section, at the above address. If you have any questions, please call Willard Hanks at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/wh/t

Enclosure

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

In the Matter of an
Application for Permit
Modification by:

Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32837
_________________________/

DRAFT Permit No. AC48-214902B
AIRS I.D. No. 0950225-003-AC
Orange County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

The Department of Environmental Protection gives notice of its intent to issue an air construction permit modification (copy of DRAFT Permit Modification enclosed) for the changes to the facility as detailed in the application specified above, for the reasons stated below.

The applicant, Foamex L.P., applied on June 10, 1996, to the Department of Environmental Protection for a modification to a previously issued air construction permit for their flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32837.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210 and 62-212, Florida Administrative Code (F.A.C.). This source modification is not exempt from permitting procedures. The Department has determined that a permit modification is required to operate the facility as proposed.

The Department intends to issue this Permit Modification based on the belief that reasonable assurances have been provided to indicate that operation of the source will not adversary affect air quality, and the source will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-256, 62-257, 62-281, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "<u>PUBLIC NOTICE OF INTENT TO ISSUE PERMIT MODIFICATION</u>." The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400, (Telephone: 904/488-1344; FAX 904/922-6979) within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit modification.

The Department will issue the FINAL Permit Modification in accordance with the conditions of the enclosed Draft Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of the "PUBLIC NOTICE OF INTENT TO ISSUE PERMIT MODIFICATION." Written comments should be provided to the permitting authority office. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Modification, the Department shall issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, (Telephone: 904/488-9730; FAX 904/487-4938). Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION (including the PUBLIC NOTICE) and the DRAFT permit modification) were sent by certified mail before the close of business on 7-31-96 to the person(s) listed:

Mr. Douglas L. Terrill, Foamex, L.P.

In addition, the undersigned duly designated deputy agency clerk hereby certifies that copies of this INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION (including the PUBLIC NOTICE and DRAFT permit) were sent by U.S. mail on the same date to the person(s) listed:

L. Kozlov, CD
D. Nester, OCEPD
K. Rykowski, HLA

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kim Tober 7-31-96
Clerk Date

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

PUBLIC NOTICE OF INTENT TO ISSUE
AIR CONSTRUCTION PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No. AC 48-214902B (0950225-003-AC)
Foamex L.P. Flexible Polyurethane Foam Manufacturing Plant
Orange County

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification to the air construction permit for Foamex L.P., 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821. The modification will allow methylene chloride emissions at the facility to increase from 280 to 365 tons per year (TPY) for up to 5 years. After that period, the methylene chloride emissions cannot exceed 180 TPY or the applicable Maximum Available Control Technology standards, when adopted, whichever is most restrictive. A new mold and fan will be installed in the rebond foam process to increase production. Toluene diisocyanate emissions will increase from 0.02 to 0.04 TPY. These modifications do not require a Best Available Control (BACT) determination. Theoretically, a lifetime of exposure (70 years) to the maximum ambient air concentration resulting from 360 TPY of methylene chloride emissions from this facility would increase the cancer risk by 1.3 in a million. For maximum emission rates of 360 TPY for 5 years and 180 TPY thereafter, as limited by the proposed modification, the lifetime increase in cancer risk is less than 1 in a million.

The Department will issue the FINAL Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the DRAFT Permit Modification issuance action for a period of 14 (fourteen) days from the date of publication of this Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received results in a significant change in the DRAFT Permit Modification, the Department will issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

The complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
FAX: 904/922-6979

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767
Telephone: 407/894-7555
FAX: 407/897-2966

Orange County Environmental Protection Department
2002 East Michigan Street
Orlando, Florida 32806
Telephone: 407/836-7400
FAX: 407/836-7499

The complete project file includes the Draft Permit Modification, the application, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Bureau of Air Regulation, New Source Review Section, at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-1344, for additional information.

DRAFT

August XX, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas L. Terrill
Plant Manager
Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit
Permit No. AC 48-214902B
AIRS I.D. No. 0950225-003-AC

The Department is in receipt of your June 3 letter requesting the referenced air construction permit for your flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821, be modified. The requested modifications are: to allow an increase in methylene chloride emissions from 280 to 365 tons per year (TPY), limit methylene chloride emissions to a maximum of 180 TPY after this 5 year period when the new manufacturing technology that will use carbon dioxide as some of the blowing agent is in service, and increase rebond foam production by installing a new fan and mold. These requests are acceptable, with conditions, and permit No. AC 48-214902A is modified as follows:

SPECIFIC CONDITION NO. 1

From:

The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

DRAFT

To:

The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks each handling 50,000 acfm of air; and **three** roof exhaust fans **serving two molds in the rebond foam production process** with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

SPECIFIC CONDITION NO. 2

From:

The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 551,192 pounds (275.6 tons) during any twelve month period. The other chemicals used in the manufacturing process at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed **720,000** pounds (**360.0** tons) during any twelve month period **from the date of this amendment until May 31, 2001. This time is needed to install the alternate manufacturing technology that will replace part of the methylene chloride blowing agent with carbon dioxide. After May 31, 2001, methylene chloride emissions shall not exceed 360,000 pounds (180.0 tons) during any 12 month period or the standard established by an applicable Maximum Achievable Control Technology (MACT)**

DRAFT

determination, whichever is most restrictive. The other chemicals used in the manufacturing process at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, receipts for chemicals disposed of off site, **and any procedures specified in an applicable MACT determination.** The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITION NO. 4

From:

For inventory purposes, the estimated emissions from this facility (based on emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

	Emissions	
Chemicals	lbs/hr	TPY
methylene chloride	2,223	280
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.375	0.42

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II.	Foam Line Stack/ methylene chloride	1,400	165.36

DRAFT

III. Long Bun Storage Room Stack/ methylene chloride	816.7	96.5
IV. Foam Fabrication Operations/ methylene chloride	5.3	15.4
1,1,1-trichloroethane	2.5	1.86
V. Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI. Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII. Steam Boiler products of combustion (Less than 1 lb/hr of all pollutants)	Trace amounts of the normal	
VIII. Environmental Heating products of combustion (less than 1 lb/hr of all pollutants)	Trace amounts of the normal	

To:

For inventory purposes, the estimated emissions from this facility (based on emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	**2,224**	**365***
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	**0.380**	**0.44**

***After May 31, 2001, emissions shall not exceed 180 TPY or MACT, whichever is most restrictive.**

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

Notice of Permit Modification

In the Matter of an

Application for Permit
Modification by:

Mr. Rafael Rodriguez, Plant Manager
Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32837
_______________________/

Permit No. AC48-214902B
AIRS I.D. 0950225-003-AC
Orange County

Enclosed is a letter that modifies Permit Number AC 48-214902B (0950225-003-AC) for Foamex L.P.'s flexible polyurethane foam manufacturing plant located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 14 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
904-488-1344

Foamex L.P.

Permit No. AC 48-214902B (0950225-003-AC)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT MODIFICATION (including the PERMIT MODIFICATION) was sent by certified mail(*) and that all copies were mailed by U.S. mail before the close of business on 9-6-96 to the person(s) listed:

Mr. Rafael Rodriguez, Foamex, L.P.*

L. Kozlov, CD
D. Nester, OCEPD
K. Rykowski, HLA

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kim Tober 9-6-96
Clerk Date

FINAL DETERMINATION

Foamex L.P. Flexible Polyurethane Foam Manufacturing Plant
Orange County
Permit No. AC 48-214902B (0950225-003-AC)

The Intent to Issue a construction permit modification for Foamex L.P.'s flexible polyurethane foam manufacturing plant located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821 was distributed on July 31, 1996. The Notice of Intent to Issue Permit modification was published in the Orlando Sentinel on August 10, 1996. Copies of the evaluation were available for public inspection at the Department offices in Orlando and Tallahassee and at the Orange County Environmental Protection Department in Orlando.

During the public notice period, the applicant submitted comments. Their comments were that the modification should be issued in the name of the current plant manager, that the limits in the permit were for methylene chloride usage instead of emissions, and that the modified rebond foam process would contain 3 molds after the addition on the new one. The proposed modification was revised to incorporate these changes.

The final action of the Department will be to issue a letter modifying the referenced construction permit as proposed except for the change noted above.

Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

September 4, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Rafael Rodriguez
Plant Manager
Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Rodriguez:

Re: Modification of Permit
Permit No. AC 48-214902B
AIRS I.D. No. 0950225-003-AC

The Department is in receipt of your June 3 letter requesting the referenced air construction permit for your flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821, be modified. The requested modifications are: to allow an increase in methylene chloride emissions from 280 to 365 tons per year (TPY), limit methylene chloride usage as a blowing agent in the Slabstock Polyurethane Foam Process to a maximum of 180 TPY after this 5 year period when the new manufacturing technology that will use carbon dioxide as some of the blowing agent is in service, and increase rebond foam production by installing a new fan and mold. These requests are acceptable, with conditions, and permit No. AC 48-214902A is modified as follows:

SPECIFIC CONDITION NO. 1

From:

The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks each handling 50,000 acfm of air; and **three** roof exhaust fans **serving three molds in the rebond foam production process** with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule **62-297.310, F.A.C.** Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

SPECIFIC CONDITION NO. 2

From:

The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 551,192 pounds (275.6 tons) during any twelve month period. The other chemicals used in the manufacturing process at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed **720,000** pounds (**360.0** tons) during any twelve month period **from the date of this amendment until May 31, 2001. This time is needed to install the alternate manufacturing technology that will replace part of the methylene chloride blowing agent with carbon dioxide. After May 31, 2001, methylene chloride usage as a blowing agent shall not exceed 360,000 pounds (180.0 tons) during any 12 month period and methylene chloride emissions shall not exceed the standard established by an applicable Maximum Achievable Control Technology (MACT)**

determination. The other chemicals used in the manufacturing process at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, receipts for chemicals disposed of off site, **and any procedures specified in an applicable MACT determination.** The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITION NO. 4

From:

For inventory purposes, the estimated emissions from this facility (based on emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	2,223	280
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.375	0.42

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

Operation/chemical	Emissions lbs/hr	TPY
I. Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II. Foam Line Stack/ methylene chloride	1,400	165.36

III. Long Bun Storage Room Stack/ methylene chloride	816.7	96.5
IV. Foam Fabrication Operations/ methylene chloride	5.3	15.4
1,1,1-trichloroethane	2.5	1.86
V. Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI. Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII. Steam Boiler products of combustion (Less than 1 lb/hr of all pollutants)	Trace amounts of the normal	
VIII. Environmental Heating products of combustion (less than 1 lb/hr of all pollutants)	Trace amounts of the normal	

To:

For inventory purposes, the estimated emissions from this facility (based on emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	**2,224**	**365***
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	**0.380**	**0.44**

***After May 31, 2001, estimated emissions shall not exceed 180 TPY and any applicable MACT standard.**

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.40
II.	Foam Line Stack/ methylene chloride	1,400	**216**
III.	Long Bun Storage Room Stack/ methylene chloride	816.7	**126**
IV.	Foam Fabrication Operations/ methylene chloride	**6.3**	**19.6**
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	**0.0092**	**0.04**
VI.	Tank Storage (Tank No. 10) methylene chloride	**0.70**	**3.03**
VII.	Steam Boiler products of combustion (Less than 1 lb/hr of all pollutants)	Trace amounts of the normal	
VIII.	Environmental Heating products of combustion (less than 1 lb/hr of all pollutants)	Trace amounts of the normal	

SPECIFIC CONDITION NO. 5

From:

To confirm the emission factors used in the application, the permittee shall measure the emissions from both slabstock process stacks for methylene chloride by EPA Method 18, as described in 40 CFR 60, Appendix A. If the measured emission factors are significantly different from the ones used in the application, the applicant shall remodel the emissions from the facility using the emission factors established by the stack test to confirm that the Acceptable Ambient Concentration from methylene chloride is not exceeded. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then sources may be tested at less than capacity (i.e. less than 90% of the maximum operating rate allowed by this permit); in this case, subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. The stack test and modeling results hall be submitted to the Department with the application for permit to operate required by Specific Condition No. 8. (Rule 62-4.070, F.A.C.)

To:

To confirm the emission factors used in the application, the permittee shall measure the emissions from both slabstock process stacks for methylene chloride by EPA Method 18, as described in 40 CFR 60, Appendix A, **prior to January 1, 1997.** If the measured emission factors are significantly different from the ones used in the application, the applicant shall remodel the emissions from the facility using the emission factors established by the stack tests **and update the Risk Assessment for** methylene chloride. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then sources may be tested at less than capacity (i.e. less than 90% of the maximum operating rate allowed by this permit); in this case, subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. The stack test and modeling results shall be submitted to the Department with the application for permit to operate required by Specific Condition No. 8.
(Rule 62-4.070, F.A.C.)

A copy of this letter shall be attached to permit No. AC 48-214902 and shall become a part of that permit.

Sincerely,

C H Fancy

for Howard L. Rhodes, Director
Division of Air Resources
Management

HLR/wh/t

Attachment: Foamex June 3, 1996 letter
HLA August 8, 1996 letter

Harding Lawson Associates

June 3, 1996

26005.F21.816

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVE
JUN 10 1996
BUREAU OF
AIR REGULATION

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902A

Dear Mr. Fancy:

INTRODUCTION

This letter is to request an amendment to Construction Permit AC48-214902A, issued to Foamex, L.P. This letter presents a summary of the requested changes to Specific Conditions 1, 2, and 4 issued by FDEP. The requested changes include an increase in the annual methylene chloride usage in the slabstock foam production process and a modification to the enhanced exhaust system for the rebond foam production process. This amendment is requested to allow Foamex to increase slabstock foam production at their Orlando facility in the short term, for a period of up to five years, in preparation for the installation of an alternate manufacturing technology that will reduce the annual usage of methylene chloride as a blowing agent in the slabstock foam production process to less than half of the requested usage rate.

As discussed in the following comments and supported by the attachments, the predicted maximum ground level concentration for toluene diisocyanate (TDI) does not exceed the FDEP Ambient Reference Concentration (ARC) and the methylene chloride emissions from the facility pose a less than a one-in-one-million increased cancer risk as a result of the requested changes to Specific Conditions 1, 2, and 4.

COMMENT 1

Foamex requests a change to increase the number of exhaust fans for the rebond foam production process from two exhaust fans to three exhaust fans. This change is requested to increase the rebond foam production at the facility. Foamex will be adding a second mold to the rebond foam production process and relocating the process approximately 60 feet to the northeast of its current location. The addition of a second mold will require a third exhaust fan to vent the emissions from the rebond process to the atmosphere. The modification to the rebond process will also include a recirculating dust filter/collection system, which does not vent to the atmosphere. The increase in rebond foam production requires an increase in TDI usage in the process from the current usage rate of 164 lbs/hr to 328 lbs/hr. Based on the TDI emission factor of 0.000028 lb emitted/lb used,

RECEIVED
JUN 10 1996
BUREAU OF AIR REGULATION

presented in the permit application, this will result in an increase of TDI emissions from 0.0046 lbs/hr (0.02 TPY) to 0.0092 lbs/hr (0.04 TPY) from the rebond foam production process.

The modeling analysis has been revised to account for the modifications to the rebond foam production process, including 1) the increase in TDI emissions, 2) the addition of a third exhaust fan, and 3) the relocation of the rebond process. The modification only impacts the modeling results for TDI, since it is the only pollutant emitted from the rebond process exhaust fans. The results of the revised modeling analysis, presented below, show that the 8-hour and 24-hour maximum ground level concentrations for TDI are below the applicable FDEP ARC's.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP ARC ($\mu g/m^3$)
Toluene Diisocyanate	8-hour 24-hour	0.3 0.05	0.4 0.09

The revised pages, based on the requested changes, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 1 is given below.

From:

1. The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

1. The enhanced exhaust systems shall meet or exceed the following specifications. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and **three** roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

COMMENT 2

Foamex requests a change in the limits on the annual quantity of methylene chloride used at the facility, as stated in Specific Condition 2. An increase in the annual usage rate of methylene chloride from 551,192 lbs/yr (275.6 TPY) to 720,000 lbs/yr (360.0 TPY) is requested to maximize slabstock foam production in the short term, in preparation for the installation of an alternate manufacturing technology that will reduce the annual usage of methylene chloride as a blowing agent in the slabstock foam production process. The new manufacturing technology is expected to be in place and fully operational within five years. At that time the annual usage rate of methylene chloride is expected to be less than half of the requested usage rate of 720,000 lbs/yr (360.0 TPY), or less than 360,000 lbs/yr (180.0 TPY). Depending on the success of the implementation of the new process technology for the production of all grades of foam, the annual usage rate of methylene chloride may be reduced well below this level. However, it is difficult to establish a more reliable estimate at this time. Foamex will continue to reassess their ability to lower the usage of methylene chloride throughout the next five years, in order to commit to the lowest usage rate possible as a permit condition.

The requested annual increase only affects the annual average emission rates and does not affect the maximum hourly or daily emissions of methylene chloride from the slabstock foam production process. The dispersion modeling analysis has been revised based on the requested increase in the annual methylene chloride usage.

A risk assessment was also conducted to show that the increased methylene chloride emissions from the facility over a five year period and the reduced emissions after the five year period pose less than a one-in-one-million increased cancer risk over a lifetime (70 years). The risk assessment is presented as Attachment A to this letter. The basis of the risk assessment was to calculate the maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) and compare that concentration with an annual ambient reference concentration that represents a one-in-a-million cancer risk as a result of exposure over a lifetime. The FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$ is based on an ambient concentration that represents a one-in-one-million increased cancer risk as a result of exposure to that level over a lifetime (70 years). It was calculated by dividing 1.0E-6 by the EPA unit risk factor of 4.7E-7 $(\mu g/m^3)^{-1}$. As part of the risk assessment, additional modeling was conducted to determine the maximum off-site annual ground level concentration due to the reduced methylene chloride emissions after the five year period of increased emissions. The maximum off-site annual concentration due to the increased emissions for five years is 2.73 $\mu g/m^3$ and the maximum off-site annual concentration due the reduced methylene chloride usage is 1.38 $\mu g/m^3$. The maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) is calculated as follows:

$$[(2.73\ \mu g/m^3 \times 5 \text{ years}) + (1.38\ \mu g/m^3 \times 65 \text{ years})] \div 70 \text{ years} = 1.48\ \mu g/m^3$$

The resulting off-site annual methylene concentration averaged over a lifetime was then compared with the FDEP annual ARC for methylene chloride. The results, presented below, show that the maximum off-site annual ground level concentration of methylene chloride is less than the FDEP ARC and, therefore, the exposure to the estimated methylene chloride emissions from the facility over a lifetime pose less than a one-in-one-million increased cancer risk.

Compound	Averaging Time	Maximum Off-Site Annual Ground Level Concentration Averaged Over a Lifetime ($\mu g/m^3$)	FDEP Annual ARC Representing a One-in-One-Million Increased Cancer Risk Over a Lifetime ($\mu g/m^3$)
Methylene Chloride	Annual	1.48	2.0

The revised pages, based on the requested change, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

It should be noted that the USEPA is currently developing NESHAP regulations for the Flexible Polyurethane Foam Manufacturing Industry that will require Maximum Achievable Control Technology (MACT) for facilities that have emissions of methylene chloride or any other single hazardous air pollutant (HAP) greater than 10 tons per year. It is expected that these regulations will be promulgated within the next one to two years.

The requested change in Specific Condition 2, which includes the increase in annual TDI usage as discussed in Comment 2, is given below.

From:

2. The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 551,192 lbs/yr (275.6 TPY) during any twelve month period. The other chemicals used in the manufacturing processes at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

2. The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed **720,000 lbs/yr** (**360.0 TPY**) during any twelve month period **for a five year period ending May 31, 2001 and thereafter shall not exceed 360,000 lbs/yr (180.0 TPY) during any twelve month period.** The other chemicals used in the manufacturing processes at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

COMMENT 3

As a result of the requested increases in annual methylene chloride, discussed in Comments 2, and the increase in the hourly TDI usage in the rebond process, discussed in Comment 1, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The calculations supporting this change are provided in the attached revised pages of Volume I of the permit application. The requested change in Specific Condition 4 is given below.

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

   AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32	15.39
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,223.64	364.64
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3792	0.444

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	216
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	126
IV.	Foam Fabrication Operations/ methylene chloride	6.28	19.61
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0092	0.04
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.69	3.03
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

CLOSING

Should you require any additional information or have any questions regarding these issues please contact Kay Rykowski at (407)851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration Number 23374

JMW/JLT/jmw
26005W06.DOC/

Attachments:
- A. Risk Assessment of Methylene Chloride Emissions
- B. Revised pages to Volume I of Original Permit Application
- C. Revised pages to Volume II: Dispersion Modeling Analysis of Original Permit Application
- D. Output Listings from Revised Modeling (Appendixes C, F, G, and H of Volume II of Original Permit Application)

cc:
Mr. Raphael Rodriguez, Foamex, L.P., Orlando, Florida
Mr. Tom Burghardt, Foamex, L.P., Linwood, Pennsylvania
Ms. Teri Copeland, HLA, Irvine, California

BEST AVAILABLE COPY

Harding Lawson Associates

August 8, 1996

26005.F21.816

RECEIVED

AUG 12 1996

BUREAU OF
AIR REGULATION

Mr. Willard Hanks
Review Engineer
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Foamex, L.P., Orlando
DRAFT Modification of Permit & Public Notice of Intent to Issue
Permit No. AC 48-214902B
AIRS I.D. No. 0950225-003-AC

Dear Mr. Hanks:

Foamex, L.P. (Foamex) and Harding Lawson Associates (HLA) have received and reviewed the subject DRAFT Modification of Permit and Public Notice of Intent to Issue for Foamex's Orlando Facility. We have four minor comments regarding the draft modification. These comments do not affect or change the emissions as presented in the draft modification or public notice.

COMMENT 1

Rafael Rodriguez is the new Plant Manager of Foamex's Orlando facility. Please address the final Modification of Permit, and all future correspondence, to Mr. Rodriguez.

COMMENT 2

The rebond foam production process at the facility currently consists of two roof exhaust fans serving two molds. Foamex will be adding a third mold and fan to this process. Foamex requests that Specific Condition No. 1, as presented on Page 2 of the draft modification, be corrected to read as follows:

"... and three roof exhaust fans **serving <u>three</u> molds in the rebond foam production process** ..."

COMMENT 3

Specific Condition No. 2 has always limited methylene chloride usage, not emissions. As presented in the draft modification, this condition limits methylene chloride usage prior to May 31, 2001, and limits methylene chloride emissions after May 31, 2001. Even though all of the methylene chloride used in the Slabstock Process is emitted, Foamex requests, that to be consistent, Specific Condition No. 2 in the modification be revised to limit methylene chloride usage only. The following revised wording is suggested:

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

"The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed 720,000 pounds (360.0 tons) during any twelve month period **from the date of this amendment until May 31, 2001. This time is needed to install the alternate manufacturing technology that will replace part of the methylene chloride blowing agent with carbon dioxide. After May 31, 2001, methylene chloride usage as a blowing agent shall not exceed 360,000 pounds (180.0 tons) during any 12 month period or methylene chloride emissions shall not exceed the standard established by an applicable Maximum Achievable Control Technology (MACT) determination, whichever is most restrictive.** ..."

COMMENT 4

The emissions contained in Specific Condition No. 4 of the permit are presented as estimated emissions for inventory purposes and are not presented as limits. In the draft modification, the footnote to the total estimated annual methylene chloride emissions limits methylene chloride emissions after May 31, 2001, to 180 TPY or MACT, whichever is most restrictive. Since the methylene chloride emissions are limited by the usage limits imposed by Specific Condition No. 2 and Specific Condition No. 4 presents all other emissions as estimated emissions, Foamex requests that the footnote be revised to present the methylene chloride emissions after May 31, 2001 as estimated emissions. The following revised wording is suggested:

"***After May 31, 2001, estimated emissions do not exceed 180 TPY or MACT, whichever is most restrictive.**"

CLOSING

As previously stated, the comments above do not affect the emissions as presented in the draft modification and public notice. Therefore, upon confirmation from you that these comments do not constitute a significant change in the DRAFT Modification of Permit and will not require FDEP to reissue the draft modification package, we will go ahead with the publication of the Public Notice of Intent to Issue.

Please do not hesitate to contact us if you any questions or comments or if you require any additional information.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal

JMW/JLT/tbm/26005W34.DOC

cc: Mr. Alan Zahm, FDEP Central District
Mr. Dennis Nester, OCEPD
Mr. Tom Burghardt, Foamex International, Linwood, PA
Mr. Tony Grosso, Foamex International, Linwood, PA
Mr. Rafael Rodriguez, Foamex, L.P., Orlando
Ms. Kay Rykowski, HLA, Orlando

To:

2. The methylene chloride used as a blowing agent in the Slabstock Polyurethane Foam Process at the facility shall not exceed **720,000 lbs/yr (360.0 TPY)** during any twelve month period **for a five year period ending May 31, 2001 and thereafter shall not exceed 360,000 lbs/yr (180.0 TPY) during any twelve month period.** The other chemicals used in the manufacturing processes at the facility shall not exceed the following quantities during any twelve month period: 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

COMMENT 3

As a result of the requested increases in annual methylene chloride, discussed in Comments 2, and the increase in the hourly TDI usage in the rebond process, discussed in Comment 1, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The calculations supporting this change are provided in the attached revised pages of Volume I of the permit application. The requested change in Specific Condition 4 is given below.

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

   AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

	Emissions	
Chemicals	lbs/hr	TPY
methylene chloride	2,222.65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32	15.39
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	**2,223.64**	**364.64**
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	**0.3792**	**0.444**

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	**216**
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	**126**
IV.	Foam Fabrication Operations/ methylene chloride	**6.28**	**19.61**
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	**0.0092**	**0.04**
VI.	Tank Storage (Tank No. 10)/ methylene chloride	**0.69**	**3.03**
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

BEST AVAILABLE COPY

CLOSING

Should you require any additional information or have any questions regarding these issues please contact Kay Rykowski at (407)851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration Number 23374

JMW/JLT/jmw
26005W06.DOC/

Attachments:
- A. Risk Assessment of Methylene Chloride Emissions
- B. Revised pages to Volume I of Original Permit Application
- C. Revised pages to Volume II: Dispersion Modeling Analysis of Original Permit Application
- D. Output Listings from Revised Modeling (Appendixes C, F, G, and H of Volume II of Original Permit Application)

cc: Mr. Raphael Rodriguez, Foamex, L.P., Orlando, Florida
Mr. Tom Burghardt, Foamex, L.P., Linwood, Pennsylvania
Ms. Teri Copeland, HLA, Irvine, California

Attachment A

Risk Assessment of Methylene Chloride Emissions
Foamex, L.P., Orlando, Florida

RISK ASSESSMENT OF METHYLENE CHLORIDE EMISSIONS
FOAMEX, L.P.
ORLANDO, FLORIDA

Prepared for

Foamex, L.P.
1353 Gemini Boulevard
Orlando, Florida 32837

HLA Project No. 26005.F21.816

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration No. 23374

Teri L. Copeland, DABT
Principal Toxicologist

June 3, 1996

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1418

INTRODUCTION

Foamex, L.P. is requesting an amendment to FDEP Construction Permit AC48-214902, to change the limit on the annual quantity of methylene chloride used as a blowing agent in the slabstock foam production process at the facility from 551,192 lbs/yr (275.6 TPY) to 720,000 lbs/yr (360.0 TPY). The increase is requested to maximize slabstock foam production in the short term, in preparation for the installation of an alternate manufacturing technology that will reduce the annual usage of methylene chloride as a blowing agent in the slabstock foam production process. The new manufacturing technology is expected to be in place and fully operational within five years. At that time the annual usage rate of methylene chloride is expected to be less than half of the requested annual usage rate of 720,000 lbs/yr (360.0 TPY), or less than 360,000 lbs/yr (180.0 TPY).

In support of Foamex, L.P.'s request for a permit amendment, Harding Lawson Associates (HLA) has prepared this risk assessment to show that the increased methylene chloride emissions from the facility over a five year period and the reduced emissions after the five year period pose less than a one-in-one-million increased cancer risk over a lifetime (70 years). Based on discussions with FDEP, the risk assessment is limited to methylene chloride, because the results of the modeling presented in Volume II: Dispersion Modeling Analysis of the permit application show that

- the estimated maximum off-site concentrations due to the emissions of all other compounds from the facility meet the applicable FDEP Ambient Reference Concentrations (ARCs); and
- the estimated maximum off-site annual concentration of methylene chloride due to the increased emissions from the facility exceeds the FDEP annual ARC for methylene chloride.

The basis of the risk assessment was to calculate the maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) and compare that concentration with an annual ambient reference concentration that represents a one-in-one-million cancer risk as a result of exposure over a lifetime. The risk assessment is presented in the following three sections:

1) Exposure Assessment which identifies the compound of concern, exposure pathway, exposed populations, exposure duration, and estimated off-site exposure concentration;

2) Toxicity Assessment which provides a discussion of the cancer unit risk factor used to assess the risk and the weight of evidence for carcinogenicity; and

3) Risk Characterization which compares the results of the estimated maximum off-site air concentration with the annual ambient reference concentration associated with an incremental lifetime cancer risk of one-in-one-million.

EXPOSURE ASSESSMENT

Foamex currently uses methylene chloride as the blowing agent in its slabstock polyurethane foam production process. In the process the raw materials (toluene diisocyanate, polyol, water, catalysts, surfactants, pigment and/or flame retardant additives, and methylene chloride) are mixed and discharged into a trough where the mixture begins to react and flow down the trough in an enclosed tunnel. Heat generated by the exothermic reaction volatilizes the methylene chloride which serves to reduce the foam density and to provide cooling of the mixture as it discharges energy during the exothermic reaction. The foam continues down the foam line conveyor in the enclosed tunnel and is cut into "buns" and stored in the long bun storage room. The foam releases 60% of the methylene chloride as it travels through the tunnel before reaching the long bun storage room and these emissions are vented to the atmosphere via a 125 ft high exhaust stack. The foam buns are stored temporarily in the long bun storage room during a twelve hour cure period, during which time the foam continues to release 35% of the remaining methylene chloride at a diminishing rate. Negative pressure is maintained in the long bun storage room and the methylene chloride emissions are vented to the atmosphere via another 125 ft high exhaust stack. The remaining 5% of the methylene chloride in the foam is released during subsequent foam fabrication operations along in three isolated areas at the facility and is vented to the atmosphere via three 53 ft high exhaust stacks. Also, a small amount of methylene chloride is emitted from the glue used during the foam fabrication operations through the same three exhaust stacks. (A more detailed discussion of the production process can be found in the permit application.)

Since the methylene chloride used in the production process is emitted to the atmosphere as a vapor, the only complete route of exposure to the methylene chloride is inhalation.

To be conservative, the potential exposed populations to the emissions of methylene chloride were assumed to be exposed to the maximum off-site air concentration. Therefore, the maximum off-site annual ground level concentration of methylene chloride was estimated in Volume II: Dispersion Modeling Analysis of the permit application based on the increased annual methylene chloride usage of 720,000 lbs/yr. Using the EPA Industrial Source Complex-Short Term (ISCST2) model, the estimated maximum off-site annual concentration is 2.73 $\mu g/m^3$. A detailed discussion of the modeling can be found in Volume II: Dispersion Modeling Analysis of the permit application.

As part of the risk assessment, additional modeling was conducted to determine the maximum off-site annual ground level concentration based on the reduced methylene chloride usage of 360,000 lbs/yr after the five year period of increased emissions. The resulting annual concentration from the reduced emissions is 1.38 $\mu g/m^3$. This modeling was conducted in the same manner as the modeling presented in Volume II: Dispersion Modeling Analysis of the permit application with reduced methylene chloride emission rates. The emission rates used and the ISCST2 output listing from this modeling are presented in Appendix A of this risk assessment.

As previously discussed, the increased emissions of methylene chloride will occur for a maximum of five years. Therefore, the duration of the exposure to the estimated concentration at the increased emission rate will not exceed five years and the exposure duration to the estimated concentration at the reduced emission rate will be for the remainder of a lifetime exposure of 70 years, or 65 years.

TOXICITY ASSESSMENT

Information regarding the toxicity of methylene chloride was obtained from the EPA Integrated Risk Information System (IRIS) database. Methylene chloride is classified by EPA as a probable human carcinogen (EPA Weight-of-Evidence Classification B2) with sufficient evidence of carcinogenicity in animals and inadequate human data. The IRIS database provides additional toxicity data for methylene chloride including an inhalation exposure unit risk factor based on lifetime exposure to methylene chloride in air of 4.7E-7 $(\mu g/m^3)^{-1}$. A printout of the IRIS database information for methylene chloride is included as Appendix B.

The FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$ is based on an ambient concentration that represents a one-in-a-million increased cancer risk as a result of exposure to that level over a lifetime (70 years). It was calculated by dividing 1.0E-6 by the EPA unit risk factor of 4.7E-7 $(\mu g/m^3)^{-1}$.

RISK CHARACTERIZATION

In order to characterize the risk of the increased methylene chloride emissions from the facility over a five year period and the reduced emissions after the five year period, an maximum off-site annual methylene chloride concentration due to emissions from the facility averaged over a lifetime (70 years) is calculated as follows:

$$[(2.73\ \mu g/m^3 \times 5\ \text{years}) + (1.38\ \mu g/m^3 \times 65\ \text{years})] \div 70\ \text{years} = 1.48\ \mu g/m^3$$

The resulting off-site annual methylene concentration averaged over a lifetime was then compared with an annual ambient reference concentration that represents a one-in-one-million cancer risk as a result of exposure over a lifetime, which is the basis of the FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$. The results, presented below, show that the maximum off-site annual ground level concentration of methylene chloride averaged over a lifetime is less than the FDEP ARC and, therefore, the exposure to the estimated methylene chloride emissions from the facility over a lifetime pose less than a one-in-one-million increased cancer risk.

Compound	Averaging Time	Maximum Off-Site Annual Ground Level Concentration Averaged Over a Lifetime ($\mu g/m^3$)	FDEP Annual ARC Representing a One-in-One-Million Increased Cancer Risk Over a Lifetime ($\mu g/m^3$)
Methylene Chloride	Annual	1.48	2.0

Appendix A

Emission Rates and ISCST2 Output Listing for Reduced Methylene Chloride Emissions

Emission Rate Calculations for Reduced Methylene Chloride Usage

Slabstock Foam Production Methylene Chloride emission distribution:

Foam Line Stack	=	60%
Long Bun Storage Room Stack	=	35%
3 Exhaust Fans	=	5%

It is assumed that the 3 exhaust fans' emissions are equally distributed among all 3 exhaust fans.

Maximum annual slabstock foam production methylene chloride usage = 360,000 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 360,000 lb/yr ÷ 8,760 hr/yr
= 41.096 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	41.096 lb/hr x 60%	=	24.6576 lb/hr
Long Bun Storage Room Stack	=	41.096 lb/hr x 35%	=	14.3836 lb/hr
3 Exhaust Fans	=	41.096 lb/hr x 5%	=	2.0548 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	24.6576 lb/hr		
Long Bun Storage Room Stack	=	14.3836 lb/hr		
3 Exhaust Fans	=	2.0548 lb/hr + 0.3676 lb/hr	=	2.4224 lb/hr
Each Exhaust Fan	=	2.4224 lb/hr ÷ 3	=	0.8075 lb/hr

```
                    ISCST2 - (DATED 93109)

                    IBM-PC VERSION (2.11 ) ISCST2F
                    (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                    SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  6/01/1996 at 13:00:42


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO Methlyene Chloride Rolling Annual Average Emissions; 360,000 lb/yr
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME PERIOD
CO POLLUTID MC_AN_X
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79      0.00
SO SRCPARAM FOAMLINE 3.106802      38.10     299.82    24.5307      0.857
SO LOCATION LONGBUN POINT     152.40     17.07      0.00
SO SRCPARAM LONGBUN 1.812301      38.10     299.82    24.5307      0.857
SO LOCATION EXFAN_7 POINT     108.51     152.71      0.00
SO SRCPARAM EXFAN_7 0.101743      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64      0.00
SO SRCPARAM EXFAN_12 0.101743      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88     102.56      0.00
SO SRCPARAM EXFAN_19 0.101743      16.15     299.82    24.6109      1.105
SO BUILDHGT FOAMLINE    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    12.19
SO BUILDHGT FOAMLINE    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID  FOAMLINE      80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE      39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE      37.02    33.83    93.48    88.29    80.42    12.19
SO BUILDWID  FOAMLINE      18.62    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE      39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE      37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
```

```
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  LONGBUN       80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  LONGBUN       85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID  LONGBUN       95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  LONGBUN       80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  LONGBUN       85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID  LONGBUN       95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_7      116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7      146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7      150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_7      116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7      146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7       95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_12      80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID  EXFAN_12      39.97    39.64   103.63   114.23    39.97    91.81
SO BUILDWID  EXFAN_12      95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  EXFAN_12      80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID  EXFAN_12      39.97    39.64    38.10    39.64    39.97    91.81
SO BUILDWID  EXFAN_12      95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_19      80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19      85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  EXFAN_19      37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  EXFAN_19      80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19      85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  EXFAN_19      37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
```

```
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
```

```
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU FINISHED

************************************
*** SETUP Finishes Successfully ***
************************************
```

*** MODELING OPTIONS USED: CONC   RURAL FLAT   DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes: 5 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: MC_AN_X

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMXMCANX.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMXMCANX.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.31068E+01	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.18123E+01	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_7	0	0.10174E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.10174E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.10174E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** ISCST2 - VERSION 93109 ***   *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) ***   06/01/96
*** Methlyene Chloride Rolling Annual Average Emissions; 360,000 lb/yr ***   13:00:42
PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(     0.0,      0.0,      0.0,      0.0);    (    15.2,      0.0,      0.0,      0.0);
(    30.5,      0.0,      0.0,      0.0);    (    45.7,      0.0,      0.0,      0.0);
(    61.0,      0.0,      0.0,      0.0);    (    76.2,      0.0,      0.0,      0.0);
(    91.4,      0.0,      0.0,      0.0);    (   106.7,      0.0,      0.0,      0.0);
(   121.9,      0.0,      0.0,      0.0);    (   137.2,      0.0,      0.0,      0.0);
(   152.4,      0.0,      0.0,      0.0);    (   167.6,      0.0,      0.0,      0.0);
(   182.9,      0.0,      0.0,      0.0);    (   198.1,      0.0,      0.0,      0.0);
(   213.4,      0.0,      0.0,      0.0);    (   213.4,     15.2,      0.0,      0.0);
(   213.4,     30.5,      0.0,      0.0);    (   213.4,     45.7,      0.0,      0.0);
(   213.4,     61.0,      0.0,      0.0);    (   213.4,     76.2,      0.0,      0.0);
(   213.4,     91.4,      0.0,      0.0);    (   213.4,    106.7,      0.0,      0.0);
(   213.4,    121.9,      0.0,      0.0);    (   213.4,    137.2,      0.0,      0.0);
(   213.4,    152.4,      0.0,      0.0);    (   213.4,    167.6,      0.0,      0.0);
(   213.4,    182.9,      0.0,      0.0);    (   213.4,    198.1,      0.0,      0.0);
(   213.4,    213.4,      0.0,      0.0);    (   213.4,    221.0,      0.0,      0.0);
(   198.1,    221.0,      0.0,      0.0);    (   182.9,    221.0,      0.0,      0.0);
(   167.6,    221.0,      0.0,      0.0);    (   152.4,    221.0,      0.0,      0.0);
(   137.2,    221.0,      0.0,      0.0);    (   121.9,    221.0,      0.0,      0.0);
(   106.7,    221.0,      0.0,      0.0);    (    91.4,    221.0,      0.0,      0.0);
(    76.2,    221.0,      0.0,      0.0);    (    61.0,    221.0,      0.0,      0.0);
(    45.7,    221.0,      0.0,      0.0);    (    30.5,    221.0,      0.0,      0.0);
(    15.2,    221.0,      0.0,      0.0);    (     0.0,    221.0,      0.0,      0.0);
(     0.0,    213.4,      0.0,      0.0);    (     0.0,    198.1,      0.0,      0.0);
(     0.0,    182.9,      0.0,      0.0);    (     0.0,    167.6,      0.0,      0.0);
(     0.0,    152.4,      0.0,      0.0);    (     0.0,    137.2,      0.0,      0.0);
(     0.0,    121.9,      0.0,      0.0);    (     0.0,    106.7,      0.0,      0.0);
(     0.0,     91.4,      0.0,      0.0);    (     0.0,     76.2,      0.0,      0.0);
(     0.0,     61.0,      0.0,      0.0);    (     0.0,     45.7,      0.0,      0.0);
(     0.0,     30.5,      0.0,      0.0);    (     0.0,     15.2,      0.0,      0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	-.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN   FORMAT: UNFORM
SURFACE STATION NO.: 12815   UPPER AIR STATION NO.: 12842
NAME: ORLANDO   NAME: TAMPA
YEAR: 1986   YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST2 - VERSION 93109 ***   *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) ***   06/01/96
*** Methlyene Chloride Rolling Annual Average Emissions; 360,000 lb/yr ***   13:00:42
PAGE 11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_AN_X IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00
10.00	0.35356	0.56611	0.76407	0.93495	1.06480	1.15177	1.20823	1.24167	1.25936
20.00	0.34522	0.53345	0.71341	0.86466	0.97895	1.05618	1.10587	1.13561	1.15063
30.00	0.29893	0.46166	0.60857	0.74824	0.85627	0.92668	0.96806	0.99048	0.99902
40.00	0.24833	0.38612	0.53899	0.68893	0.81235	0.89913	0.95322	0.98614	1.00321
50.00	0.21243	0.35705	0.51419	0.66531	0.78559	0.86884	0.92033	0.95093	0.96620
60.00	0.17677	0.30140	0.44605	0.59430	0.72545	0.82580	0.89535	0.94239	0.97159
70.00	0.11851	0.23351	0.38675	0.55058	0.70181	0.82069	0.90529	0.96335	1.00005
80.00	0.10644	0.19862	0.32737	0.48225	0.63406	0.75060	0.82657	0.87060	0.89088
90.00	0.05020	0.12436	0.25479	0.41847	0.56522	0.66833	0.72913	0.76063	0.77079
100.00	0.04668	0.12130	0.25575	0.42421	0.57315	0.67407	0.72828	0.75143	0.75288
110.00	0.06822	0.15369	0.30908	0.50779	0.68814	0.81701	0.89402	0.93391	0.94617
120.00	0.08483	0.18127	0.33718	0.54475	0.74557	0.90109	1.00485	1.06766	1.09766
130.00	0.09419	0.19073	0.32940	0.52029	0.71116	0.85872	0.95412	1.00780	1.02969
140.00	0.10327	0.20015	0.30173	0.44725	0.59905	0.71833	0.79700	0.84122	0.86038
150.00	0.12609	0.21357	0.31039	0.42427	0.53889	0.63100	0.69454	0.73378	0.75605
160.00	0.14532	0.24611	0.35136	0.45492	0.55196	0.63219	0.69388	0.73779	0.76924
170.00	0.16264	0.27320	0.38971	0.51350	0.63049	0.72361	0.79132	0.83535	0.86371
180.00	0.17791	0.28392	0.39811	0.51657	0.62720	0.71801	0.78781	0.83943	0.88023
190.00	0.19808	0.29348	0.40447	0.51604	0.61313	0.68664	0.73758	0.77091	0.79311
200.00	0.23494	0.33202	0.44203	0.54842	0.63650	0.70144	0.74443	0.77131	0.78789
210.00	0.30011	0.42097	0.55277	0.67354	0.76540	0.82858	0.86683	0.88886	0.90121
220.00	0.37006	0.53244	0.70656	0.85902	0.96864	1.03964	1.07900	1.09748	1.10263
230.00	0.38744	0.60577	0.81698	0.99194	1.12033	1.20899	1.26540	1.29790	1.31453
240.00	0.38013	0.62167	0.84817	1.02608	1.15202	1.23861	1.29616	1.33311	1.35666
250.00	0.35576	0.59522	0.81522	0.98437	1.10007	1.17514	1.21889	1.24156	1.25129
260.00	0.35658	0.58853	0.79838	0.95934	1.07308	1.15147	1.20184	1.23275	1.25096
270.00	0.37397	0.61423	0.82608	0.98773	1.10371	1.18578	1.24091	1.27703	1.30026
280.00	0.38258	0.62718	0.83507	0.98551	1.08733	1.15459	1.19625	1.22103	1.23538
290.00	0.38606	0.62659	0.82859	0.97103	1.06347	1.12052	1.15200	1.16694	1.17208
300.00	0.40825	0.65539	0.85801	0.99752	1.08520	1.13787	1.16549	1.17741	1.18053
310.00	0.43551	0.67950	0.87401	0.99972	1.06953	1.10221	1.10867	1.09924	1.08211
320.00	0.41862	0.65120	0.82443	0.92984	0.98226	1.00108	0.99644	0.97853	0.95431
330.00	0.38122	0.59923	0.76531	0.86752	0.91856	0.93559	0.93041	0.91287	0.88961
340.00	0.35864	0.57473	0.74749	0.86385	0.93360	0.97103	0.98756	0.99014	0.98467

350.00	0.36872	0.60035	0.79521	0.93974	1.03609	1.09403	1.12541	1.13770	1.13797
360.00	0.35850	0.57775	0.77486	0.92785	1.03511	1.10319	1.14645	1.17143	1.18478

*** ISCST2 - VERSION 93109 ***   *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) ***   06/01/96
*** Methlyene Chloride Rolling Annual Average Emissions; 360,000 lb/yr ***   13:00:42
PAGE 12

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_AN_X IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00
10.00	1.26642	1.26608	1.25998	1.24938	1.23537	1.21835	1.19964	1.17743	1.15331
20.00	1.15569	1.15388	1.14682	1.13530	1.12052	1.10291	1.08364	1.06153	1.03724
30.00	0.99903	0.99428	0.98656	0.97658	0.96507	0.95236	0.93861	0.92343	0.90612
40.00	1.00966	1.00953	1.00470	0.99601	0.98457	0.97079	0.95529	0.93870	0.91869
50.00	0.97144	0.97060	0.96590	0.95819	0.94839	0.93686	0.92387	0.90987	0.89361
60.00	0.98810	0.99602	0.99827	0.99617	0.99082	0.98315	0.97331	0.96211	0.94901
70.00	1.02043	1.02953	1.03075	1.02594	1.01654	1.00389	0.98854	0.97156	0.95318
80.00	0.89468	0.88860	0.87698	0.86195	0.84502	0.82687	0.80811	0.78911	0.77013
90.00	0.76683	0.75468	0.73850	0.72003	0.70062	0.68074	0.66089	0.64134	0.62226
100.00	0.74102	0.72248	0.70146	0.67969	0.65822	0.63735	0.61731	0.59817	0.57989
110.00	0.93998	0.92330	0.90140	0.87683	0.85136	0.82574	0.80053	0.77603	0.75238
120.00	1.10421	1.09635	1.08030	1.05936	1.03575	1.01056	0.98485	0.95905	0.93340
130.00	1.02884	1.01444	0.99254	0.96643	0.93808	0.90863	0.87889	0.84935	0.82032
140.00	0.86177	0.85256	0.83758	0.81936	0.79965	0.77907	0.75818	0.73753	0.71721
150.00	0.76675	0.77036	0.76965	0.76587	0.76016	0.75233	0.74318	0.73320	0.72191
160.00	0.79248	0.81000	0.82326	0.83266	0.83914	0.84236	0.84293	0.84123	0.83730
170.00	0.88143	0.89184	0.89703	0.89818	0.89615	0.89100	0.88352	0.87426	0.86331
180.00	0.91315	0.94062	0.96362	0.98294	0.99839	1.00977	1.01807	1.02259	1.02297
190.00	0.80773	0.81752	0.82381	0.82800	0.83008	0.83002	0.82884	0.82586	0.81935
200.00	0.79757	0.80284	0.80492	0.80513	0.80353	0.80012	0.79572	0.79033	0.78088
210.00	0.90774	0.91098	0.91159	0.91067	0.90766	0.90306	0.89703	0.88980	0.87708
220.00	1.09952	1.09151	1.08026	1.06737	1.05290	1.03785	1.02241	1.00638	0.98549
230.00	1.32056	1.31937	1.31309	1.30323	1.29025	1.27578	1.25920	1.24055	1.21621
240.00	1.37139	1.37960	1.38307	1.38235	1.37816	1.37134	1.36153	1.34763	1.32706
250.00	1.25322	1.24990	1.24325	1.23386	1.22241	1.20933	1.19492	1.17725	1.15427
260.00	1.26030	1.26311	1.26077	1.25413	1.24408	1.23113	1.21584	1.19674	1.17082
270.00	1.31382	1.31968	1.31922	1.31341	1.30332	1.28965	1.27320	1.25254	1.22401
280.00	1.24247	1.24425	1.24195	1.23618	1.22763	1.21670	1.20383	1.18677	1.16273
290.00	1.17046	1.16387	1.15349	1.13992	1.12384	1.10573	1.08606	1.06274	1.03420
300.00	1.17787	1.17090	1.16047	1.14744	1.13207	1.11501	1.09630	1.07417	1.04651
310.00	1.06115	1.03812	1.01403	0.98959	0.96521	0.94120	0.91746	0.89275	0.86494
320.00	0.92777	0.90050	0.87352	0.84721	0.82183	0.79740	0.77366	0.74943	0.72419
330.00	0.86512	0.84115	0.81823	0.79702	0.77735	0.75907	0.74174	0.72395	0.70532
340.00	0.97520	0.96338	0.94986	0.93555	0.92050	0.90501	0.88915	0.87132	0.85234

350.00	1.13139	1.12043	1.10627	1.09023	1.07278	1.05400	1.03470	1.01276	0.99000
360.00	1.19098	1.19257	1.19048	1.18603	1.17917	1.17025	1.16028	1.14592	1.13017

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_AN_X IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
0.00	0.00	0.39942	15.24	0.00	0.34865
30.48	0.00	0.29540	45.72	0.00	0.24263
60.96	0.00	0.19961	76.20	0.00	0.15582
91.44	0.00	0.12584	106.68	0.00	0.10558
121.92	0.00	0.09333	137.16	0.00	0.09136
152.40	0.00	0.08897	167.64	0.00	0.09084
182.88	0.00	0.09538	198.12	0.00	0.09340
213.36	0.00	0.11053	213.36	15.24	0.08936
213.36	30.48	0.06939	213.36	45.72	0.05627
213.36	60.96	0.04702	213.36	76.20	0.03210
213.36	91.44	0.01870	213.36	106.68	0.01988
213.36	121.92	0.02076	213.36	137.16	0.05270
213.36	152.40	0.07464	213.36	167.64	0.10952
213.36	182.88	0.14105	213.36	198.12	0.18089
213.36	213.36	0.22111	213.36	220.98	0.23912
198.12	220.98	0.23587	182.88	220.98	0.22882
167.64	220.98	0.22219	152.40	220.98	0.22683
137.16	220.98	0.20198	121.92	220.98	0.19132
106.68	220.98	0.18979	91.44	220.98	0.20494
76.20	220.98	0.21037	60.96	220.98	0.23077
45.72	220.98	0.27321	30.48	220.98	0.32797
15.24	220.98	0.38600	0.00	220.98	0.44556
0.00	213.36	0.42312	0.00	198.12	0.37624
0.00	182.88	0.32024	0.00	167.64	0.26326
0.00	152.40	0.22711	0.00	137.16	0.20535
0.00	121.92	0.19333	0.00	106.68	0.18755
0.00	91.44	0.18725	0.00	76.20	0.19571
0.00	60.96	0.22543	0.00	45.72	0.27104
0.00	30.48	0.31474	0.00	15.24	0.36033

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF MC_AN_X IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR,	YR,	ZELEV,	ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	1.38307 AT (	-499.54,	-239.36,	0.00,	0.00)	GP	POLAR_1
	2ND HIGHEST VALUE IS	1.38235 AT (	-542.84,	-264.36,	0.00,	0.00)	GP	POLAR_1
	3RD HIGHEST VALUE IS	1.37960 AT (	-456.24,	-214.36,	0.00,	0.00)	GP	POLAR_1
	4TH HIGHEST VALUE IS	1.37816 AT (	-586.14,	-289.36,	0.00,	0.00)	GP	POLAR_1
	5TH HIGHEST VALUE IS	1.37139 AT (	-412.94,	-189.36,	0.00,	0.00)	GP	POLAR_1
	6TH HIGHEST VALUE IS	1.37134 AT (	-629.44,	-314.36,	0.00,	0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

Appendix B

EPA IRIS Database Information for Methylene Chloride

0070
Dichloromethane; CASRN 75-09-2 (07/01/93)

Health risk assessment information on a chemical is included in IRIS only after a comprehensive review of chronic toxicity data by work groups composed of U.S. EPA scientists from several Program Offices. The summaries presented in Sections I and II represent a consensus reached in the review process. The other sections contain U.S. EPA information which is specific to a particular EPA program and has been subject to review procedures prescribed by that Program Office. The regulatory actions in Section IV may not be based on the most current risk assessment, or may be based on a current, but unreviewed, risk assessment, and may take into account factors other than health effects (e.g., treatment technology). When considering the use of regulatory action data for a particular situation, note the date of the regulatory action, the date of the most recent risk assessment relating to that action, and whether technological factors were considered. Background information and explanations of the methods used to derive the values given in IRIS are provided in the five Background Documents in Service Code 5, which correspond to Sections I through V of the chemical files.

STATUS OF DATA FOR Dichloromethane

File On-Line 01/31/87

Category (section)	Status	Last Revised
Oral RfD Assessment (I.A.)	on-line	03/01/88
Inhalation RfC Assessment (I.B.)	pending	09/01/91
Carcinogenicity Assessment (II.)	on-line	01/01/91
Drinking Water Health Advisories (III.A.)	on-line	03/01/88
U.S. EPA Regulatory Actions (IV.)	on-line	01/01/92
Supplementary Data (V.)	no data	

==

_I. CHRONIC HEALTH HAZARD ASSESSMENTS FOR NONCARCINOGENIC EFFECTS

__I.A. REFERENCE DOSE FOR CHRONIC ORAL EXPOSURE (RfD)

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 03/01/88

The Reference Dose (RfD) is based on the assumption that thresholds exist for certain toxic effects such as cellular necrosis, but may not exist for other toxic effects such as carcinogenicity. In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Please refer to Background Document 1 in Service Code 5 for an elaboration of these concepts. RfDs can also be derived for the noncarcinogenic health effects of compounds which are also carcinogens. Therefore, it is essential to refer to other sources of information concerning the carcinogenicity of this substance. If the U.S. EPA has evaluated this substance for potential human carcinogenicity, a summary of that evaluation will be contained in Section II of this file when a review of that evaluation is completed.

___I.A.1. ORAL RfD SUMMARY

Critical Effect	Experimental Doses*	UF	MF	RfD
Liver toxicity 2-Year Rat Drinking Water Bioassay National Coffee Association, 1982	NOAEL: 5.85 and 6.47 mg/kg/day for males and females, respectively LOAEL: 52.58 and 58.32 mg/kg/day for males and females, respectively	100	1	6E-2 mg/kg/day

*Conversion Factors: Doses reflect actual values and not nominal ones.

___I.A.2. PRINCIPAL AND SUPPORTING STUDIES (ORAL RfD)

National Coffee Association. 1982. 24-Month chronic toxicity and oncogenicity study of methylene chloride in rats. Final Report. Prepared by Hazleton Laboratories America, Inc., Vienna, VA. (Unpublished)

The chosen study appears to have been very well conducted, with 85 rats/ sex at each of four nominal dose groups (i.e., 5, 50, 125 and 250 mg/kg/day) for 2 years. A high-dose recovery group of 25 rats/sex, as well as two control groups of 85 and 50 rats/sex, was also tested. Many effects were monitored. Treatment related histological alterations of the liver were evident at nominal doses of 50 mg/kg/day or higher. The low nominal dose of 5 mg/kg/day was a NOAEL.

The supporting data base is limited. A NOAEL of 87 mg/cu.m was reported in one inhalation study (Haun et al., 1972). [The equivalent oral dose is about 28 mg/kg bw/day (i.e., 87 mg/cu.m x 0.5 x 0.223 cu.m/day/0.35 kg; these exposure values are for rats).]

___I.A.3. UNCERTAINTY AND MODIFYING FACTORS (ORAL RfD)

UF -- (10a x 10h) The 100-fold factor accounts for both the expected intra- and interspecies variability to the toxicity of this chemical in lieu of specific data.

MF -- None

___I.A.4. ADDITIONAL COMMENTS (ORAL RfD)

None.

___I.A.5. CONFIDENCE IN THE ORAL RfD

Study -- High
Data Base -- Medium
RfD -- Medium

The study is given a high confidence rating because a large number of animals of both sexes were tested in four dose groups, with a large number of controls. Many effects were monitored and a dose-related increase in severity was observed. The data base is rated medium to low because only a few studies support the NOAEL. Medium confidence in the RfD follows.

___I.A.6. EPA DOCUMENTATION AND REVIEW OF THE ORAL RfD

Source Document -- U.S. EPA, 1985

Other EPA Documentation -- None

Agency Work Group Review -- 06/24/85, 07/08/85, 11/06/85

Verification Date -- 11/06/85

___I.A.7. EPA CONTACTS (ORAL RfD)

Krishan Khanna / OST -- (202)260-7588

Michael L. Dourson / OHEA -- (513)569-7533

__I.B. REFERENCE CONCENTRATION FOR CHRONIC INHALATION EXPOSURE (RfC)

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride

A risk assessment for this substance/agent is under review by an EPA work group.

==

_II. CARCINOGENICITY ASSESSMENT FOR LIFETIME EXPOSURE

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 01/01/91

Section II provides information on three aspects of the carcinogenic risk assessment for the agent in question; the U.S. EPA classification, and quantitative estimates of risk from oral exposure and from inhalation exposure. The classification reflects a weight-of-evidence judgment of the likelihood that the agent is a human carcinogen. The quantitative risk estimates are presented in three ways. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per ug/L drinking water or risk per ug/cu.m air breathed. The third form in which risk is presented is a drinking water or air concentration providing cancer risks of 1 in 10,000, 1 in 100,000 or 1 in 1,000,000. Background Document 2 (Service Code 5) provides details on the rationale and methods used to derive the carcinogenicity values found in IRIS. Users are referred to Section I for information on long-term toxic effects other than carcinogenicity.

__II.A. EVIDENCE FOR CLASSIFICATION AS TO HUMAN CARCINOGENICITY

___II.A.1. WEIGHT-OF-EVIDENCE CLASSIFICATION

Classification --B2; probable human carcinogen

Basis -- Based on inadequate human data and sufficient evidence of carcinogenicity in animals; increased incidence of hepatocellular neoplasms and alveolar/bronchiolar neoplasms in male and female mice, and increased incidence of benign mammary tumors in both sexes of rats, salivary gland sarcomas in male rats and leukemia in female rats. This classification is supported by some positive genotoxicity data, although results in mammalian systems are generally negative.

___II.A.2. HUMAN CARCINOGENICITY DATA

Inadequate. Neither of two studies of chemical factory workers exposed to dichloromethane showed an excess of cancers (Ott et al., 1983; Friedlander et al., 1978; Hearne and Friedlander, 1981). The Ott et al. (1983) study was designed to examine cardiovascular effects, and consequently the study period was too short to allow for latency of site-specific cancers. In the Friedlander et al. (1978) study, exposures were low, but the data provided some suggestion of an increased incidence of pancreatic tumors. This study was recently updated to include a larger cohort, followed through 1984, and an investigation of possible confounding factors (Hearne et al., 1986, 1987). A nonsignificant excess in pancreatic cancer deaths was observed, which was interpreted by EPA (1987a) as neither clear evidence of carcinogenicity in humans, nor evidence of noncarcinogenicity. An update of the Ott et al. (1983) study, based on longer follow-up, indicated possible elevation of liver and biliary tract cancers (TSCA section 8(e) submission no. 8eHQ-0198-0772 FLWP et seq., 1989).

___II.A.3. ANIMAL CARCINOGENICITY DATA

Sufficient. Dichloromethane administered in the drinking water induced a significant increase in combined hepatocellular carcinoma and neoplastic nodules in female F344 rats and a nonsignificant increase in combined hepatocellular carcinoma and neoplastic nodules in male B6C3F1 mice (NCA, 1982, 1983). Two inhalation studies with dichloromethane have shown an increased incidence of benign mammary tumors in both sexes of Sprague-Dawley (Burek et al., 1984) and F344 (NTP, 1986) rats. Male Sprague-Dawley rats had increased salivary gland sarcoma (Burek et al., 1984) and female F344 rats had increased leukemia incidence (NTP, 1986). Both sexes of B6C3F1 mice developed liver and lung tumors after dichloromethane treatment (NTP, 1986).

In a 2-year study by the National Coffee Association (1982, 1983), groups of 85 F344 rats/sex/dose received 5, 50, 125, or 250 (mg/kg)/day of dichloromethane in the drinking water. Control groups consisted of 135 rats/sex. In female rats the incidence of combined hepatocellular carcinoma and neoplastic nodules was statistically significantly increased in the 50 and 250 mg/kg dose groups when compared with matched controls (0/134, 1/85, 4/83, 1/85, and 6/85 in the five dose groups 0, 5, 50, 125, and 250 (mg/kg)/day, respectively). The incidence of hepatocellular carcinoma alone was not significantly increased (0/134, 0/85, 2/83, 0/85, 2/85). The combined incidence of hepatocellular carinoma and neoplastic nodules in controls and the 4 dose groups (472 rats: 4 with carcinoma and 8 with neoplastic nodules) was similar to that for historical controls (419 rats; 5 with carcinoma, 19 with neoplastic nodules). Male rats showed no increase in liver tumors.

In the same National Coffee Association study (1982, 1983), B6C3F1 mice received 0, 60, 125, 185, or 250 (mg/kg)/day of dichloromethane in drinking water. Treatment groups consisted of 50 female mice and 200, 100, 100, and 125 male mice (low to high dose). One hundred females and 125 males served as controls. Male mice had an increased incidence of combined neoplastic nodules and hepatocellular carcinoma (24/125, 51/200, 30/100, 31/99, 35/125). The increase was not dose-related, but the pairwise comparisons for the two mid-dose groups were reported to be statistically significant (U.S. EPA, 1985a). The hepatocellular carcinoma incidence alone for male mice (which was about 55 to 65% of the total) was not significantly elevated. Female mice did not have increased liver tumor incidence. The EPA (1985b) regarded this study as suggestive but not conclusive evidence for carcinogenicity of dichloromethane.

A gavage bioassay of dichloromethane conducted by NTP (1982) has not been published because of high mortality, much of which was attributed to gavage accidents.

Inhalation exposure of 107 to 109 Syrian hamsters/sex/dose to 0, 500, 1500, or 3500 ppm of dichloromethane for 6 hours/day, 5 days/week for 2 years did not induce neoplasia (Burek et al., 1984). Sprague-Dawley rats (129/sex/dose) were exposed under the same conditions. Female rats administered the highest dose experienced significantly reduced survival from 18-24 months. Female rats showed a dose-related increase in the average number of benign mammary tumors per rat (1.7, 2.3, 2.6, 3.0), although the numbers of rats with tumors were not significantly increased. A similar response was observed in male rats, but to a lesser degree. In the male rats there was a statistically significant positive trend in the incidence of sarcomas of the salivary gland (1/93, 0/94, 5/91, 11/88); the incidence was significantly elevated at the high dose. There is a question as to whether these doses reached the MTD, particularly in the hamsters and the male rats. In another study (Dow Chemical Co., 1982), 90 Sprague-Dawley rats/sex were exposed by inhalation to 0, 50, 200, or 500 ppm dichloromethane for 20 months (male) or 24 months (female). No salivary tumors were observed, but there was an exposure-related increase in the total number of benign mammary tumors in female rats, although the increase was not statistically significant in any individual exposure group.

Groups of 50 each male and female F344/N rats and B6C3F1 mice were exposed to dichloromethane by inhalation, 6 hours/day, 5 days/week for 2 years (NTP, 1986). Exposure concentrations were 0, 1000, 2000, or 4000 ppm for rats and 0, 2000, or 4000 ppm for mice. Survival of male rats was low; however, this apparently was not treatment-related. Survival was decreased in a treatment-related fashion for male and female mice and female rats. Mammary adenomas and fibroadenomas were significantly increased in male and female rats after survival adjustment, as were mononuclear cell leukemias in female rats. Among treated mice of both sexes there were significantly increased incidences of hepatocellular adenomas and carcinomas, and of alveolarbronchiolar adenomas and carcinomas, by life table tests. Adenomas and carcinomas were significantly increased alone as well as in combination. In addition, there were significant dose-related increases in the number of lung tumors per animal multiplicity in both sexes of mice.

Two inhalation assays using dogs, rabbits, guinea pigs, and rats showed no tumors, but were not conducted for the lifetime of the animals (Heppel et al., 1944; MacEwen et al., 1972). Theiss et al., (1977) injected Strain A male mice intraperitoneally with 0, 160, 400, or 800 mg/kg of dichloromethane 16 to 17 times, over 5 to 6 weeks. Survival of the animals was poor. The animals remaining 24 weeks after the first treatment were killed and examined for lung tumors; pulmonary adenomas were found.

II.A.4. SUPPORTING DATA FOR CARCINOGENICITY

Dichloromethane was mutagenic for Salmonella typhimurium with or without the addition of hepatic enzymes (Green, 1983) and produced mitotic recombination in yeast (Callen et al., 1980). Results in cultured mammalian cells have generally been negative, but dichloromethane has been shown to transform rat embryo cells and to enhance viral transformation of Syrian hamster embryo cells (Price et al., 1978; Hatch et al., 1983). Although chlorinated solvents have often been suspected of acting through a nongenotoxic mechanism of cell proliferation, Lefevre and Ashby (1989) found methylene chloride to be unable to induce hepatocellular division in mice.

__II.B. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM ORAL EXPOSURE

___II.B.1. SUMMARY OF RISK ESTIMATES

Oral Slope Factor -- 7.5E-3 per (mg/kg)/day

Drinking Water Unit Risk -- 2.1E-7 per (ug/L)

Extrapolation Method -- Linearized multistage procedure, extra risk

Drinking Water Concentrations at Specified Risk Levels:

Risk Level	Concentration
E-4 (1 in 10,000)	5E+2 ug/L
E-5 (1 in 100,000)	5E+1 ug/L
E-6 (1 in 1,000,000)	5E+0 ug/L

___II.B.2. DOSE-RESPONSE DATA (CARCINOGENICITY, ORAL EXPOSURE)

Tumor Type -- hepatocellular adenomas or carcinomas (NTP) and hepatocellular cancer and neoplastic nodules (NCA)
Test Animals -- mouse/B6C3F1 (female, NTP; male, NCA)
Route -- inhalation (NTP); drinking water (NCA)
Reference -- NTP, 1986; National Coffee Association (NCA), 1983

Dose				
Administered (ppm)	mg/kg/day	Human Equivalent (mg/kg)/day	Tumor Incidence	Reference
0	0	0	3/50	NTP, 1986
2000	1582	122	16/48	
4000	3162	244	40/48	
	0	0	24/125	NCA, 1983
	60	4.5	51/200	
	125	9.4	30/100	
	185	14.0	31/99	
	250	18.9	35/125	

___II.B.3. ADDITIONAL COMMENTS (CARCINOGENICITY, ORAL EXPOSURE)

The slope factor is an arithmetic mean of slope factors derived from NTP(1986) and the National Coffee Association (1983) data, 2.6E-3 per (mg/kg)/day and 1.2E-2 per (mg/kg)/day, respectively. The use of liver tumor data from the NTP inhalation bioassay was considered valid since dichloromethane is rapidly absorbed following either inhalation or ingestion.

Dose conversions used the mean body weight for female mice at the midpoint of the bioassay, and an estimated inhalation rate of 0.0407 cu.m/day. To obtain estimates of unit risk for humans, an inhalation rate of 20 cu.m/day was assumed. Dichloromethane was considered to be well-absorbed as a vapor at low doses. No pharmacokinetic or metabolism data have been used to modify the oral unit risk estimate, because such analyses have not yet been carried out.

The unit risk should not be used if the water concentration exceeds 5E+4 ug/L, since above this concentration the unit risk may not be appropriate.

___II.B.4. DISCUSSION OF CONFIDENCE (CARCINOGENICITY, ORAL EXPOSURE)

Adequate numbers of animals were used in both assays. Risk estimates were based on the more sensitive sex in each study. The two risk estimates were within a factor of 5.

II.C. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM INHALATION EXPOSURE

II.C.1. SUMMARY OF RISK ESTIMATES

Inhalation Unit Risk -- 4.7E-7 per (ug/cu.m)

Extrapolation Method -- Linearized multistage procedure, extra risk

Air Concentrations at Specified Risk Levels:

Risk Level	Concentration
E-4 (1 in 10,000)	2E+2 ug/cu.m
E-5 (1 in 100,000)	2E+1 ug/cu.m
E-6 (1 in 1,000,000)	2E+0 ug/cu.m

II.C.2. DOSE-RESPONSE DATA FOR CARCINOGENICITY, INHALATION EXPOSURE

Tumor Type -- combined adenomas and carcinomas
Test Animals -- mouse/B6C3F1, female
Route -- inhalation
Reference -- NTP, 1986

	Dose			
Tumor Type	Administered (ppm)	Transformed Animal (mg/kg)/day	Human Equivalent (mg/kg)/day	Tumor Incidence
Liver	0	0	0	3/45
	2000	1582	356	16/46
	4000	3162	712	40/46
Lung	0	0	0	3/45
	2000	1582	356	30/46
	4000	3162	712	41/46

II.C.3. ADDITIONAL COMMENTS (CARCINOGENICITY, INHALATION EXPOSURE)

The unit risk of 4.7E-7 per (ug/cu.m), which incorporates information on pharmacokinetics and metabolism of dichloromethane, is approximately nine-fold lower than the previous applied dose estimate (U.S. EPA, 1987a,b). Internal dose estimates were based on the metabolism of dichloromethane by the glutathione-s-transferase pathway, as estimated by the model developed by

Andersen et al. (1987). The internal dose was corrected for interspecies differences in sensitivity by using the surface area correction factor.

Calculation of a slope factor from the unit risk is inappropriate when pharmacokinetic models are used. (When dose-response relationships are figured on the basis of internal or metabolized dose, a slope factor in terms of per (mg/kg)/day represents a back calculation using different absorption assumptions than the pharmacokinetic models. This introduces possible contradictions.)

The unit risk should not be used if the air concentration exceeds 2E+4 ug/cu.m, since above this concentration the unit risk may differ from that stated. Since the unit risk is based on a pharmacokinetic model, the risk may change with alterations in exposure patterns. Thus, the unit risk presented here may not be applicable to acute, high exposures.

___II.C.4. DISCUSSION OF CONFIDENCE (CARCINOGENICITY, INHALATION EXPOSURE)

Adequate numbers of animals were observed and tumor incidences were significantly increased in a dose-dependent fashion. Analysis excluding animals that died before observation of the first tumors produced similar risk estimates, as did time-to-tumor analysis. The use of animal and human metabolism and pharmacokinetic data reduces some of the uncertainty typically associated with dose-risk extrapolation. A great deal of uncertainty still exists, however, in the estimates of internal dose generated by the model of Andersen et al. (1987). Important uncertainties remain regarding the pharmacokinetics, pharmacodynamics, and mechanisms of carcinogenicity for dichloromethane.

__II.D. EPA DOCUMENTATION, REVIEW, AND CONTACTS (CARCINOGENICITY ASSESSMENT)

___II.D.1. EPA DOCUMENTATION

Source Document -- U.S. EPA, 1985a,b, 1987a,b

The Addendum to the Health Assessment Document, the Update to the Health Assessment Document and Addendum, and the Technical Analysis of New Methods and Data for dichloromethane have received Agency and external review, including a review by the Science Advisory Board (SAB). Although the last two documents are not yet finalized and the SAB comments are not yet incorporated, these do not alter this document's analyses or conclusions.

___II.D.2. REVIEW (CARCINOGENICITY ASSESSMENT)

Agency Work Group Review -- 11/12/86, 12/04/86, 04/06/89

Verification Date -- 04/06/89

___II.D.3. U.S. EPA CONTACTS (CARCINOGENICITY ASSESSMENT)

Lorenz Rhomberg / OHEA -- (202)260-5723

Dharm V. Singh / OHEA -- (202)260-5898

==

_III. HEALTH HAZARD ASSESSMENTS FOR VARIED EXPOSURE DURATIONS

__III.A. DRINKING WATER HEALTH ADVISORIES

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 03/01/88

The Office of Drinking Water provides Drinking Water Health Advisories (HAs) as technical guidance for the protection of public health. HAs are not enforceable Federal standards. HAs are concentrations of a substance in drinking water estimated to have negligible deleterious effects in humans, when ingested, for a specified period of time. Exposure to the substance from other media is considered only in the derivation of the lifetime HA. Given the absence of chemical-specific data, the assumed fraction of total intake from drinking water is 20%. The lifetime HA is calculated from the Drinking Water Equivalent Level (DWEL) which, in turn, is based on the Oral Chronic Reference Dose. Lifetime HAs are not derived for compounds which are potentially carcinogenic for humans because of the difference in assumptions concerning toxic threshold for carcinogenic and noncarcinogenic effects. A more detailed description of the assumptions and methods used in the derivation of HAs is provided in Background Document 3 in Service Code 5.

___III.A.1. ONE-DAY HEALTH ADVISORY FOR A CHILD

One-day HA -- 1.33E+1 mg/L

LOAEL -- 1326 mg/kg/day
UF -- 1000 (allows for interspecies and intrahuman variability with the use of
a LOAEL from an animal study)
Assumptions -- 1 L/day water consumption for a 10-kg child

Principal Study -- Kimura et al., 1971

Single oral doses of dichloromethane were administered to young adult Sprague-Dawley rats. An approximate dose of 1.3 g/kg was the lowest dose to induce the first observable gross signs of toxicity.

___III.A.2. TEN-DAY HEALTH ADVISORY FOR A CHILD

Ten-day HA -- 1.5E+0 mg/L

NOAEL -- 15 mg/kg/day
UF -- 100 (allows for interspecies and intrahuman variability with the use of a NOAEL from an animal study)
Assumptions -- 1 L/day water consumption for a 10-kg child

Principal Study -- Bornmann and Loeser, 1967

Male and female Wistar rats were administered dichloromethane in drinking water for 13 weeks at a dose of 15 mg/kg/day. No treatment-related effects were observed.

___III.A.3. LONGER-TERM HEALTH ADVISORY FOR A CHILD

Appropriate data for calculating a Longer-term HA is not available. It is recommended that a modified DWEL (adjusted for a 10-kg child) of 0.5 mg/L be used as the Longer-term HA.

___III.A.4. LONGER-TERM HEALTH ADVISORY FOR AN ADULT

Appropriate data for calculating a Longer-term HA is not available. It is recommended that the DWEL of 1.75 mg/L be used as the Longer-term HA for the 70-kg adult.

___III.A.5. DRINKING WATER EQUIVALENT LEVEL / LIFETIME HEALTH ADVISORY

DWEL -- 1.75E+0 mg/L

Assumptions -- 2 L/day water consumption for a 70-kg adult

RfD Verification Date = 11/06/85

Lifetime HA -- None

Dichloromethane is considered to be a probable human carcinogen. Refer to Section II of this file for information on the carcinogenicity of this substance.

Principal Study (DWEL) -- National Coffee Association, 1982 (This study was used in the derivation of the chronic oral RfD; see Section I.A.2.)

___III.A.6. ORGANOLEPTIC PROPERTIES

No data available

___III.A.7. ANALYTICAL METHODS FOR DETECTION IN DRINKING WATER

Analysis of dichloromethane is by a purge-and-trap gas chromatographic procedure used for the detection of volatile organohalides in drinking water. Confirmatory analysis is by mass spectrometry.

___III.A.8. WATER TREATMENT

The available information suggests that adsorption by granular activated carbon and air stripping are feasible technologies to remove dichloromethane from drinking water.

___III.A.9. DOCUMENTATION AND REVIEW OF HAs

U.S. EPA. 1985. Final Draft of the Drinking Water Criteria Document on Dichloromethane. Office of Drinking Water, Washington, DC.

EPA review of HAs in 1985.

Public review of HAs following notification of availability in October, 1985.

Scientific Advisory Panel review of HAs in January, 1986.

Preparation date of this IRIS summary -- 06/24/87

___III.A.10. EPA CONTACTS

Krishan Khanna / OST -- (202)260-7588

Edward V. Ohanian / OST -- (202)260-7571

__III.B. OTHER ASSESSMENTS

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride

Content to be determined.

==

_IV. U.S. EPA REGULATORY ACTIONS

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 01/01/92

EPA risk assessments may be updated as new data are published and as assessment methodologies evolve. Regulatory actions are frequently not updated at the same time. Compare the dates for the regulatory actions in this section with the verification dates for the risk assessments in sections I and II, as this may explain inconsistencies. Also note that some regulatory actions consider factors not related to health risk, such as technical or economic feasibility. Such considerations are indicated for each action. In addition, not all of the regulatory actions listed in this section involve enforceable federal standards. Please direct any questions you may have concerning these regulatory actions to the U.S. EPA contact listed for that particular action. Users are strongly urged to read the background information on each regulatory action in Background Document 4 in Service Code 5.

__IV.A. CLEAN AIR ACT (CAA)

No data available

__IV.B. SAFE DRINKING WATER ACT (SDWA)

___IV.B.1. MAXIMUM CONTAMINANT LEVEL GOAL (MCLG) for Drinking Water

Value -- 0 mg/L (Proposed, 1990)

Considers technological or economic feasibility? -- NO

Discussion -- The proposed MCLG for dichloromethane is zero based on the evidence of carcinogenic potential (B2).

Reference -- 55 FR 30370 (07/25/90)

EPA Contact -- Health and Ecological Criteria Division / OST /
(202) 260-7571 / FTS 260-7571; or Safe Drinking Water Hotline / (800) 426-4791

___IV.B.2. MAXIMUM CONTAMINANT LEVEL (MCL) for Drinking Water

Value -- 0.005 mg/L (Proposed, 1990)

Considers technological or economic feasibility? -- YES

Discussion -- The proposed MCL is equal to the PQL of 0.005 and is associated with a maximum lifetime individual risk of E-5.

Monitoring requirements -- All systems monitored every 3 or 5 years (dependent upon system size), except for non-vulnerable surface water systems with no detection of VOCs; vulnerable systems to be monitored quarterly; repeat monitoring dependent upon vulnerability, detection and system size.

Analytical methodology -- Purge and trap gas chromatography (EPA 503.1); purge and trap gas chromatographic/mass spectrometry (EPA 524.1): PQL= 0.005 mg/L.

Best available technology -- Packed tower aeration.

Reference -- 55 FR 30370 (07/25/90)

EPA Contact -- Drinking Water Standards Division / OGWDW / (202) 260-7575 / FTS 260-7575; or Safe Drinking Water Hotline / (800) 426-4791

___IV.B.3. SECONDARY MAXIMUM CONTAMINANT LEVEL (SMCL) for Drinking Water

No data available

___IV.B.4. REQUIRED MONITORING OF "UNREGULATED" CONTAMINANTS

Status -- Listed (Final, 1987)

Discussion -- "Unregulated" contaminants are those contaminants for which EPA establishes a monitoring requirement but which do not have an associated final MCLG, MCL, or treatment technique. EPA may regulate these contaminants in the future.

Monitoring requirement -- Monitoring required for all water systems at a minimum frequency of once every 5 years.

Analytical methodology -- Gas chromatography (EPA 502.1, 502.2, 503.1); gas chromatographic/mass spectrometry (EPA 524.1, 524.2).

Reference -- 56 FR 25690 (07/08/87)

EPA Contact -- Drinking Water Standards Division / OGWDW /
(202) 260-7575 / FTS 260-7575; or Safe Drinking Water Hotline / (800) 426-4791

__IV.C. CLEAN WATER ACT (CWA)

___IV.C.1. AMBIENT WATER QUALITY CRITERIA, Human Health

Water and Fish Consumption: 1.9E-1 ug/L

Fish Consumption Only: 1.57E+1 ug/L

Considers technological or economic feasibility? -- NO

Discussion -- Methylene chloride is classified as a carcinogen, and under the assumption of no threshold for a carcinogen, the recommended WQC is zero. However, if zero cannot be obtained and exposure is via ingestion of water and aquatic organisms, 0.19 ug/L is associated with an upper-bound excess lifetime risk of 1.0E-6 [other risk levels to consider: 1.0E-5 (1.9 ug/L) and 1.0E-7 (0.019 ug/L)]. If exposure is only via ingestion of aquatic organisms, the WQC associated with an upper-bound excess lifetime risk of 1.0E-6 is 15.7 ug/L.
The criteria are based on halomethanes as a class.

Reference -- 45 FR 79318 (11/13/80)

EPA Contact -- Criteria and Standards Division / OWRS
(202)260-1315 / FTS 260-1315

___IV.C.2. AMBIENT WATER QUALITY CRITERIA, Aquatic Organisms

Freshwater:

Acute LEC -- 1.1E+4 ug/L
Chronic -- None

Marine:

Acute LEC -- 1.2E+4 ug/L
Chronic LEC -- 6.4E+3 ug/L

Considers technological or economic feasibility? -- NO

Discussion -- The values that are indicated as "LEC" are not criteria, but are the lowest effect levels found in the literature. LECs are given when the minimum data required to derive water quality criteria are not available. The values given represent halomethanes as a class.

Reference -- 45 FR 79318 (11/13/80)

EPA Contact -- Criteria and Standards Division / OWRS
(202)260-1315 / FTS 260-1315

__IV.D. FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

No data available

__IV.E. TOXIC SUBSTANCES CONTROL ACT (TSCA)

___IV.E.1. TSCA, SECTION 6

Status -- Advance Notice of Proposed Rulemaking (ANPR) (1985)

Discussion -- Initiated priority review under TSCA, sect. 6, of risks from cancer which may be associated with certain exposures to methylene chloride. Receipt of a positive NTP bioassay triggered an accelerated analysis under TSCA, sect. 4(f). Based on its preliminary analysis, the Agency decided that methylene chloride should be classified as a B2 probable human carcinogen under its Interim Cancer Guidelines. TSCA, sect. 4(f), requires that the Agency initiate appropriate action under sect. 5, 6, or 7 within a 180-day period of receipt of health effect information which triggers a sect. 4(f) decision. The sect. 6 ANPR initiated appropriate action.

Reference: 50 FR 42005 (10/17/85)

EPA Contact -- Chemical Control Division / OTS (202)260-3749 / FTS 260-3749

__IV.F. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

___IV.F.1. RCRA APPENDIX IX, for Ground Water Monitoring

Status -- Listed

Reference -- 52 FR 25942 (07/09/87)

EPA Contact -- RCRA/Superfund Hotline
(800)424-9346 / (202)260-3000 / FTS 260-3000

__IV.G. SUPERFUND (CERCLA)

___IV.G.1. REPORTABLE QUANTITY (RQ) for Release into the Environment

Value (status) -- 1000 pounds (Final, 1985)

Considers technological or economic feasibility? -- NO

Discussion -- The final adjusted RQ of 1000 pounds is based upon a chronic toxicity score of 10. This substance has recently been identified for assessment of carcinogenicity, and the RQ will be reevaluated when that assessment is completed.

Reference -- 50 FR 13456 (04/04/85); 54 FR 33418 (08/14/89)

EPA Contact -- RCRA/Superfund Hotline
(800)424-9346 / (202)260-3000 / FTS 260-3000

==

_V. SUPPLEMENTARY DATA

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride

Not available at this time.

==

_VI. BIBLIOGRAPHY

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 08/01/91

__VI.A. ORAL RfD REFERENCES

Haun, C.C., E.H. Vernot, K.I. Darmer Jr. and S.S. Diamond. 1972. Continous animal exposure to low levels of dichloromethane. AMRL-TR-72-13. In: Proceedings of the 3rd Annual Conference on Environmental Toxicology, Wright-Patterson Air Force Base, Ohio, Aerospace Medical Research Laboratory. p. 199-208.

National Coffee Association. 1982. 24-Month chronic toxicity and oncogenicity
study of methylene chloride in rats. Final Report. Prepared by Hazleton Laboratories America, Inc., Vienna, VA. (Unpublished)

U.S. EPA. 1985. Drinking Water Criteria Document for Methylene Chloride. Office of Drinking Water, Washington, DC.

__VI.B. INHALATION RfD REFERENCES

None

VI.C. CARCINOGENICITY ASSESSMENT REFERENCES

Andersen, M.E., H.J. Clewell, III, M.L. Gargas, F.A. Smith and R.H. Reitz. 1987. Physiologically based pharmacokinetics and the risk assessment process for methylene chloride. Toxicol. Appl. Pharmacol. 87: 185-205.

Burek, J.D., K.D. Nitschke, T.J. Bell, et al. 1984. Methylene chloride: A two year inhalation toxicity and oncogenicity study in rats and hamsters. Fund. Appl. Toxicol. 4: 30-47.

Callen, D.F., C.R. Wolf and R.M. Philpot. 1980. Cytochrome P-450 mediated genetic activity and cytotoxicity of seven halogenated aliphatic hydrocarbons in Saccharomyces cerevisiae. Mutat. Res. 77: 55-63.

Dow Chemical Company. 1982. Methylene chloride: A two-year inhalation and oncogenicity study in rats. Toxicology Research Laboratory, Health and Environmental Sciences, Dow Chemical Company, Midland, MI.

Friedlander, B.R., F.T. Hearne and S. Hall. 1978. Epidemiologic investigation of employees chronically exposed to methylene chloride. J. Occup. Med. 20(10): 657-666.

Green, T. 1983. The metabolic activation of dichloromethane and chlorofluoromethane in a bacterial mutation assay using Salmonella typhimurium. Mutat. Res. 118(4): 277-288.

Hatch, G.G., P.D. Mamay, M.L. Ayer, B.C. Casto and S. Nesnow. 1983. Chemical enhancement of viral transformation in Syrian hamster embryo cells by gaseous and volatile chlorinated methanes and ethanes. Cancer Res. 43: 1945-1950.

Hearne, F.T. and B.R. Friedlander. 1981. Follow-up of methylene chloride study. J. Occup. Med. 23: 660.

Hearne, F.T., F. Grose, J.W. Pifer and B.R. Friedlander. 1986. Methylene chloride mortality study update. Eastman Kodak Company, Rochester, NY. June 16.

Hearne, F.T., F Grose, J.W. Pifer, B.R. Friedlander and R.L. Raleigh. 1987. Methylene Chloride mortality study: dose-response characterization and animal model comparison. J. Occup. Med. 29 (3): 217-228.

Heppel, L.A., P.A. Neal, T.L. Perrin, M.L. Orr and V.T. Porterfield. 1944. Toxicology of dichloromethane (methylene chloride). I. Studies on effects of daily inhalation. J. Ind. Hyg. Toxicol. 26(1): 8-21.

Lefevre, P.A. and J. Ashby. 1989. Evaluation of dichloromethane as an inducer of DNA synthesis in B6C3F1 mouse liver. Carcinogenesis. 10(6): 1067-1072.

MacEwen, J.D., E.H. Vernot and C.C. Haun. 1972. Continuous animal exposure to dichloromethane. AMRL-TR-72-28, Systems Corporation Report No. W-71005. Wright Patterson Air Force Base, Ohio, Aerospace Medical Research. AD746295.

NCA (National Coffee Association). 1982. Twenty-four-month chronic toxicity and oncogenicity study of methylene chloride in rats. Final Report. Prepared by Hazleton Laboratories, America, Inc., Vienna, VA. Unpublished.

NCA (National Coffee Association). 1983. Twenty-four month oncogenicity study of methylene chloride in mice. Final Report. Prepared by Hazleton Laboratories, America, Inc., Vienna, VA.

NTP (National Toxicology Program). 1982. Draft technical report on the carcinogenesis bioassay of dichloromethane (methylene chloride) (CAS No. 75-09-2) in F344/N rats and B6C3F1 mice (gavage study). Research Triangle Park, NC and Bethesda, MD. Unpublished. NTP-82-061.

NTP (National Toxicology Program). 1986. Toxicology and carcinogenesis studies of dichloromethane (methylene chloride) (CAS No. 75-09-2) in F344/N rats and B6C3F1 mice (inhalaltion studies). NTP-TRS-306.

Ott, M.G., L.K. Skory, B.B. Holder, J.M. Bronson and P.R. Williams. 1983. Health evaluation of employees occupationally exposed to methylene chloride: Mortality. Scand. J. Work Environ. Health. 9(Suppl. 1): 8-16.

Price, P.J., C.M. Hassett and J.I. Mansfield. 1978. Transforming activities of trichloroethylene and proposed industrial alternatives. In Vitro. 14(3): 290-293.

Thiess, J.C., G.D. Stoner, M.B. Shimkin and E.K. Weisburger. 1977. Test for carcinogenicity of organic contaminants of United States drinking waters by pulmonary tumor response in strain A mice. Cancer Res. 37: 2717-2720.

Toxic Substances Control Act. 1989. Section 8(e) submission no. 8eHQ-0198-0772 FLWP et seq.

U.S. EPA. 1985a. Health Assessment Document for Dichloromethane (Methylene Chloride). Final Report. Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-82/004F.

U.S. EPA. 1985b. Addendum to the Health Assessment Document for Dichloromethane (methylene chloride). Updated carcinogenicity assessment. Prepared by the Carcinogen Assessment Group, OHEA, Washington, DC. EPA/600/8-82/004FF.

U.S. EPA. 1987a. Update to the Health Assessment Document and Addendum for Dichloromethane (Methylene Chloride): Pharmacokinetics, Mechanism of Action and Epidemiology. Review Draft. Office of Health and Environmental Assessment, Washington, DC. EPA/600/8-87/030A.

U.S. EPA. 1987b. Technical Analysis of New Methods and Data Regarding Dichloromethane Hazard Assessments. Review Draft. Office of Health and Environmental Assessment, Washington, DC. EPA/600/8- 87/029A.

VI.D. DRINKING WATER HA REFERENCES

Bornmann, G., and A. Loeser. 1967. Zur Frage einer chronisch-toxischen Wirkung von Dichloromethan. Z. Lebensm.-Unters. Forsch. 136: 14-18.

Kimura, E.T., D.M. Ebert and P.W. Dodge. 1971. Acute toxicity and limits of solvent residue for sixteen organic solvents. Toxicol. Appl. Pharmacol. 19: 699-704.

National Coffee Association. 1982. 24-Month chronic toxicity and oncogenicity study of methylene chloride in rats. Final Report. Prepared by Hazleton Laboratories America, Inc., Vienna, VA. (Unpublished)

U.S. EPA. 1985. Final Draft of the Drinking Water Criteria Document on Dichloromethane. Office of Drinking Water, Washington, DC.

==

_VII. REVISION HISTORY

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride

Date	Section	Description
04/20/87	II.C.1.	Unit Risk corrected from 4.1E-4 to 4.1E-6
05/21/87	II.A.2.	Missing text replaced in 3rd paragraph
03/01/88	I.A.1.	Dose conversion clarified
03/01/88	I.A.2.	Text revised
03/01/88	II.B.3.	Text revised
03/01/88	II.B.4.	Confidence statement revised
03/01/88	II.C.3.	Text revised
03/01/88	II.C.4.	Confidence statement revised
03/01/88	II.D.3.	Primary contact changed
03/01/88	III.A.	Health Advisory added
01/01/89	II.	Carcinogen summary noted as pending change
10/01/89	II.B.3.	Inhalation rate corrected in paragraph 1
10/01/89	II.C.2.	Dose corrections in mg/kg/day
10/01/89	II.C.3.	Inhalation rate corrected in paragraph 1
10/01/89	II.D.3.	Contacts phone number changed
08/01/90	IV.F.1.	EPA contact changed
09/01/90	II.	Carcinogen assessment revised following re-evaluation
09/01/90	II.C.1.	Inhalation unit risk changed
09/01/90	VI.	Bibliography on-line
01/01/91	II.C.1.	Paragraph moved to II.C.3.
01/01/91	II.C.1.	Inhalation slope factor removed (global change)
08/01/91	VI.C.	Citations clarified
09/01/91	I.B.	Inhalation RfC now under review
01/01/92	IV.	Regulatory actions updated

==

SYNONYMS

Substance Name -- Dichloromethane
CASRN -- 75-09-2
Primary Synonym -- Methylene Chloride
Last Revised -- 01/31/87

75-09-2
Aerothene MM
Chlorure de methylene
DCM
Dichlormethan, uvasol
Dichloromethane
1,1-Dichloromethane.
Freon 30
Methane dichloride
Methane, dichloro-
Methylene bichloride
Methylene Chloride
Methylene dichloride
Metylenu chlorek
Narkotil
NCI-C50102
R 30
Solaesthin
Solmethine
WLN: G1G

Attachment B

Revised Pages to Volume I of Original Permit Application

compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process.

In order to increase production the rebond process will be modified to include an additional mold and relocated approximately 60 feet to the northeast of is current location. The modified rebond process will require three 15,000 CFM exhaust fans, located in the ceiling above the process, with stack heights of 53 feet above ground level. The two existing 1,000 CFM fans will no longer serve the rebond process. The modification to the rebond process will also include a recirculating dust filter/collection system.

2.2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 3.3 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed.

2.2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the operation of the steam boiler are proposed.

2.2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 3.4 provides a listing of the individual heaters and the rated capacity of each heater.

2.2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions from the gluing process are vented to the atmosphere through the three ceiling exhaust fans located in the areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.2.1.

2.3 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

Table 2.1. Summary of Emission Sources
Foamex, L.P. - Orlando, Florida

Process Emission Source	Emission Point Number	Description
Slabstock Polyurethane Foam Production	1	Foam Line Stack
Slabstock Polyurethane Foam Production	2	Long Bun Storage Room Stack
Not operational as part of enhanced exhaust system	3	Exhaust Fan
Not operational as part of enhanced exhaust system	4	Exhaust Fan
Not operational as part of enhanced exhaust system	5	Exhaust Fan
Not operational as part of enhanced exhaust system	6	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	7	Exhaust Fan
Not operational as part of enhanced exhaust system	8	Exhaust Fan
Not operational as part of enhanced exhaust system	9	Exhaust Fan
Not operational as part of enhanced exhaust system	10	Exhaust Fan
Not operational as part of enhanced exhaust system	11	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	12	Exhaust Fan
Not operational as part of enhanced exhaust system	13	Exhaust Fan
Not operational as part of enhanced exhaust system	14	Exhaust Fan
Not operational as part of enhanced exhaust system	15	Exhaust Fan
Not operational as part of enhanced exhaust system	16	Exhaust Fan
Not operational as part of enhanced exhaust system	17	Exhaust Fan
Not operational as part of enhanced exhaust system	18	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	19	Exhaust Fan
Rebond Polyurethane Foam Production	20	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	21	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	**22**	**Rebond Exhaust Fan**
Tank Storage	23	Tank #10
Steam Boiler	24	Boiler Stack
Environmental Heating	25	Natural Gas Heaters

To calculate the maximum hourly usage rate of methylene chloride it is necessary to define the "worst case" maximum daily usage of methylene chloride. The "worst case" maximum daily methylene chloride usage is 14,000 lb/day.

The maximum hourly usage rate of methylene chloride is then calculated as follows:

Maximum hourly usage = 14,000 lb/day ÷ 6 hr/day = 2,333.33 lb/hr

The maximum annual usage of methylene chloride at the facility will be limited to 720,000 lbs/yr.

3.1.2 Rebond Polyurethane Foam Production

A summary of the typical material input and production rates for the Rebond process are provided in Table 3.2.

Table 3.2. Rebond Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Raw Materials:		
Scrap Foam	11,216	0
Polyol	918	0
TDI	328	0
Product:		
Rebond Foam Product	0	12,462

3.1.3 Tank Storage

As stated previously in Section 2.2.3 of this application, the Foamex facility includes eleven above ground storage tanks. The current estimated maximum annual material throughput for each tank is shown in Table 3.3 below.

Table 3.3. Tanks Storage Process Rates
Foamex, L.P. - Orlando, Florida

Tank Number	Product	Height (feet)	Diameter (feet)	Throughput (lbs/yr)
1	Polyol	35	12	Note 1
2	Polyol	35	12	Note 1
3	TDI	35	12	Note 2
4	Polyol	35	12	Note 1
5	Polyol	35	12	Note 1
6	TDI	35	12	Note 2
7	Empty	16	10.5	0
8	Polymer	16	10.5	1,000,000
9	Empty	35	12	0
10	Methylene Chloride	37 (long)	7	**720,000**
11	Empty	30 (long)	7	0

Note 1: Total Polyol Throughput = 15,000,000 lbs/yr
Note 2: Total TDI Throughput = 10,000,000 lbs/yr

3.1.4 Steam Boiler

The industrial boiler used for steam production is rated at 100 hp and is fired by natural gas. The boiler is used to convert an average of 1,570 gallons of water to steam each day for the Rebond process. The maximum heat input for the boiler is 4.2 mmBtu/hr with a maximum natural gas consumption rate of 4,200 cf/hr. The maximum operating schedule for the boiler is 8760 hrs/yr.

3.1.5 Environmental Heating

There are thirteen indirect natural gas fired heaters at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The total maximum heat input for the heaters is 1.85 mmBtu/hr, with a maximum natural gas usage rate of 1850 cf/hr. On an average basis, the natural gas usage rate is 200 cf/hr. Table 3.4 provides a listing of the individual heaters and heat input rates.

Table 3.4. Indirect Fired Heaters Process Rates
Foamex, L.P. - Orlando, Florida

Heater Number	Manufacturer	Model Number	Operational?	Maximum Heat Input (Btu/hr)
1	Bryant	200-341	Yes	200,000
2	Bryant	200-341	No	200,000
3	Hastings	GF200XE	Yes	200,000
4	Hastings	GF200XE	No	200,000
5	Hastings	GF200XE	Yes	200,000
6	Hastings	GF200XE	Yes	200,000
7	Hastings	GF200XE	Yes	200,000
8	Hastings	GF200XE	Yes	200,000
9	Hastings	GF200XE	Yes	200,000
10	Hastings	GF200XE	Yes	200,000
11	Bryant	200-341	No	200,000
12	Bryant	200-341	No	200,000
13	Peereless	1067	Yes	250,000
TOTAL (operational heaters only)				1,850,000

3.1.6 Foam Fabrication Operations

During Foam Fabrication Operations, the foam buns manufactured during the Slabstock process are cut and glued according to customer specifications. Approximately 3.1 lbs/hr of glue is used during these operations. The maximum annual usage rate of glue at the facility is 4,600 lb/yr, or 2.3 tons/yr.

3.2 Emissions Calculations

3.2.1 Slabstock Polyurethane Foam Production

3.2.1.1 Methylene Chloride

As stated in Section 3.1.1 of this application, methylene chloride represents the only significant emissions associated with this process. Currently, it is the only blowing agent used. In this process, all of the blowing agent used is emitted to the atmosphere and does not end up in the foam product. Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. The total uncontrolled process emissions of methylene chloride on an annual basis can, therefore, be estimated directly from the annual methylene chloride usage rate in Section 3.1.1.

Maximum annual methylene chloride usage = 720,000 lbs/yr

Maximum annual methylene chloride emissions = 720,000 lbs/yr ÷ 2,000 lbs/ton
= 360.0 tons/yr

The values shown above represent the total methylene chloride emissions from the slabstock foam production process. However, these emissions are distributed between each of the two stacks serving the process, the Foam Line Stack and the Long Bun Storage Room Stack, and the three exhaust ceiling exhaust fans serving the Foam Fabrication Operations area. Both short term and long term emission rates must be calculated for the Foam Line Stack and Long Bun Storage Room Stack. Emissions calculations for the Foam Fabrication Operations are included under that heading in Section 3.2.6. Long term or annual emissions from the Foam Line and Long Bun Storage Room can be calculated by multiplying the distribution factors for each (60% and 35%, respectively) by the total maximum annual emissions specified above.

Foam Line Stack:

Maximum annual methylene chloride emissions = **720,000** lbs/yr x 0.60
= **432,000** lb/yr

Maximum annual methylene chloride emissions = **432,000** lbs/yr ÷ 2,000 lbs/ton
= **216.0** tons/yr

Long Bun Storage Room Stack:

Maximum annual methylene chloride emissions = **720,000** lbs/yr x 0.35
= **252,000** lb/yr

Maximum annual methylene chloride emissions = **252,000** lbs/yr ÷ 2,000 lbs/ton
= **126.0** tons/yr

The first step in developing an estimate of the maximum hourly emission rate for the Foam Line and Long Bun Storage Room is to define the "worst case" maximum daily methylene chloride usage. For this purpose, the "worst case" daily usage of methylene chloride, as defined in Section 3.1.1 of this application, is 14,000 lbs/day over six hours of operation (2,333.33 lb/hr). Assuming that 60% of this quantity is released during the pour period in the foam line enclosure as the foam travels along the process line conveyor before it reaches the Long Bun Storage Room, the Foam Line Stack emits a total of 8,400 pounds of methylene chloride over the six hour pour period. As the buns enter the Long Bun Storage Room, the remaining methylene chloride which is contained in the foam material begins to be released. Assuming that 35% of the methylene chloride used during the pour is released in the Long Bun Storage Room during the cure period, a total of 4,900 pounds of methylene chloride is emitted from the Long Bun Storage Room Stack. The 5% (700 pounds) of the methylene chloride remaining after the cure period in the foam product after it is removed from the Long Bun Storage Room is emitted during the foam fabrication operations through the three ceiling exhaust fans located in the foam fabrication areas.

As stated previously, the Long Bun Storage Room emissions decay at an exponential rate over the foam cure period. Appendix A provides a detailed analysis of the actual emission rate profile for the Long Bun Storage Room. However, for emission calculation purposes, a more simple approach representing a worst case scenario is used. This approach ignores the decay profile and the foam cure period and instead assumes that the total quantity of emissions is released at a steady rate during the pour period only. Because the length of the pour period is shorter than the cure period, the resulting maximum short term emission rate is higher. Thus, this approach represents a worst case scenario. The following provides a simple summary of this mass balance.

Table 3.5. TDI Emissions Test Summary
Foamex, L.P. - Orlando, Florida

	TDI Isomer Emissions (lb/hr)		
	2,4-TDI	2,6-TDI	Total
Run 1	0.10	0.27	0.37
Run 2	0.04	0.10	0.14
Run 3	0.07	0.15	0.22
Average	0.07	0.17	0.24

Based on the highest results for a single run, the maximum TDI emissions are 0.37 lbs/hr. The maximum operating schedule of the Slabstock process is specified in Section 2.3 of this application as 6 hrs/day, 7 days/wk, 52 wks/yr. Therefore, the maximum annual hours during which TDI emissions occur based on the hours of operation is 2,184 hrs/yr. Therefore, the annual emissions of TDI are be calculated as follows:

Maximum hourly emission rate = 0.37 lbs/hr

Maximum annual emissions = (0.37 lbs/hr) x (2,184 hrs/yr) ÷ (2000 lbs/ton)
= 0.404 tons/yr

3.2.2 Rebond Polyurethane Foam Production

The TDI emissions estimated above for the Slabstock process are due to due evaporation of the chemical during its use. Although no testing has been conducted, it is assumed that similar emissions are generated from the Rebond process. To estimate the quantity of TDI emissions from the Rebond process, an emission factor was developed based on the maximum hourly emission rate and the typical TDI usage rate specified in section 3.2.1 for the Slabstock process. This emission factor can then be applied to the TDI usage rate for the Rebond process to obtain the emission rate. This emission rate is calculated as follows:

TDI emission factor = (0.37 lbs/hr emissions) ÷ (13,420 lbs/hr usage)
= 0.000028 lbs/lb

Maximum hourly Rebond process TDI emission rate = 0.000028 lbs/lb x 328 lbs/hr
= 0.0092 lbs/hr

Using the maximum operating schedule for the Rebond process of 24 hrs/day, 7 days/wk, 52 wks/yr (8,760 hrs/yr), the maximum annual emissions are calculated as follows:

Maximum annual Rebond process TDI emissions = 0.0092 lbs/hr x 8,760 hrs/yr
= 80.592 lbs/yr
= 0.04 tons/yr

3.2.3 Tank Storage

Appendix C provides detailed reports of emissions calculations for Tank 10, the methylene chloride storage tank. These reports were generated using EPA's TANKS Storage Tank Emissions Calculation Software, version **2.0**, which is based on the calculation procedures specified in AP-42 section 12. The calculations were conducted based on the maximum annual methylene chloride throughput for the facility of **720,000** lb/yr. The calculations represented in Appendix C were conducted based on the existing tank design, which includes a breather vent with no pressure setting. Thus, breathing losses, also referred to as standing losses, are not limited in any way. The following provides a summary of the results of the calculations. However, Foamex proposes to install a pressure relief vent for this tank such that standing losses would be minimized.

Total standing losses	=	**5,026.50** lbs/yr
Total working losses	=	**1,037.55** lbs/yr
Maximum annual emissions	=	(**5,026.50** lbs/yr) + (**1,037.55** lbs/yr)
	=	**6,064.05** lbs/yr
	=	(**6,064.05** lbs/yr) ÷ (2000 lbs/ton)
	=	**3.03** tons/yr
Annual average emission rate	=	(**6,064.05** lbs/yr lbs/yr) ÷ (8,760 hrs/yr)
	=	**0.69** lbs/hr

3.2.4 Steam Boiler

Emissions from the Steam Boiler are generated through natural gas combustion. Appendix D provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.6 provides a summary of the results of these calculations.

Table 3.6. Steam Boiler Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.021	0.092
Sulfur dioxide	0.0025	0.011
Nitrogen oxide	0.59	2.58
Carbon monoxide	0.147	0.64
Total hydrocarbons	0.013	0.055

3.2.5 Environmental Heating

Emissions from Environmental Heating are generated through natural gas combustion. Appendix E provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.7 provides a summary of the results of these calculations.

Table 3.7. Environmental Heating Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.00925	0.00185
Sulfur dioxide	0.00111	0.000222
Nitrogen oxide	0.259	0.0518
Carbon monoxide	0.06475	0.01295
Total hydrocarbons	0.00555	0.00111

3.2.6 Foam Fabrication Operations

3.2.6.1 Methylene Chloride

As stated above, after the foam bun cure period ends 5% of the total methylene chloride used is still retained in the foam buns. This quantity is not released until the buns leave the Long Bun Storage Room and are cut or processed during Foam Fabrication operations. This remaining 5% is emitted from the foam into the areas isolated for foam fabrication operations and discharged to the atmosphere through the three ceiling exhaust fans located in these areas. Further, since an inventory of foam product is always present in the foam fabrication areas, these emissions are released at a constant rate throughout the year. The maximum annual emissions and maximum hourly emission rates for these emissions from the three foam fabrication operations exhaust fans are calculated as follows.

Maximum annual emissions	=	**720,000** lbs/yr x 0.05
	=	**36,000** lbs/yr
	=	**18.0** tons/yr
Maximum hourly emissions	=	**36,000** lbs/yr ÷ 8,760 hr/yr
	=	**4.11** lb/hr

In the gluing process Foamex uses a methylene chloride based glue, therefore, methylene chloride emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum methylene chloride content of the glue is 70% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the methylene chloride emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.70
	=	2.17 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.70 ÷ 2,000 lbs/ton
	=	1.61 tons/yr

The total methylene chloride emissions from the foam fabrication operations are calculated as follows:

Maximum hourly emissions	=	**4.11** lb/hr + 2.17 lbs/hr

	=	**6.28** lbs/hr
Maximum annual emissions	=	**18.0** tons/yr + 1.61 tons/yr
	=	**19.61** tons/yr

3.2.6.2 1,1,1-Trichloroethane

In the gluing process Foamex may also use a 1,1,1-trichloroethane based glue, therefore, 1,1,1-trichloroethane emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum 1,1,1-trichloroethane content of the glue is 81% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the 1,1,1-trichloroethane emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.81
	=	2.5 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.81 ÷ 2,000 lbs/ton
	=	1.86 tons/yr

3.2.7 Emissions Summary

A summary of the maximum hourly and annual emission rates for each process is provided in Table 3.8. Emission rates calculated on an 8-hour average and 24-hour average are also provided in Volume II of this application, the Dispersion Modeling Analysis, which is submitted under separate cover.

Table 3.8. Emissions Summary
Foamex, L.P. - Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/hr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	2216.67	342.00	N/A	N/A	2216.67	342.00
	Tank Storage	0.69	3.03	N/A	N/A	0.69	3.03
	Foam Fabrication	6.28	19.61	N/A	N/A	6.28	19.61
	Subtotal	2223.64	364.64	N/A	N/A	2223.64	364.64
1,1,1-Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.404	N/A	N/A	0.37	0.404
	Rebond Process	0.0092	0.04	N/A	N/A	0.0092	0.04
	Subtotal	0.3792	0.444	N/A	N/A	0.3792	0.444
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2).
2. Reference applicable emission standards and units (e.g. Rule 17-2.6000(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input).
3. Calculated from operating data and applicable standard.
4. Emission, if source operated without control (See Section V, Item 3).

3.3 Emission Stack Data

Table 3.9 provides a summary of the geometry and flow characteristics for each stack located at the Foamex, L.P. facility.

Table 3.9. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Water Vapor Content
1	Foam Line Stack	125	33.75	30,000	80	80.481	Ambient
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	Ambient
3	Exhaust Fan		Not operational as part of enhanced exhaust system				
4	Exhaust Fan		Not operational as part of enhanced exhaust system				
5	Exhaust Fan		Not operational as part of enhanced exhaust system				
6	Exhaust Fan		Not operational as part of enhanced exhaust system				
7	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
8	Exhaust Fan		Not operational as part of enhanced exhaust system				
9	Exhaust Fan		Not operational as part of enhanced exhaust system				
10	Exhaust Fan		Not operational as part of enhanced exhaust system				
11	Exhaust Fan		Not operational as part of enhanced exhaust system				
12	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
13	Exhaust Fan		Not operational as part of enhanced exhaust system				
14	Exhaust Fan		Not operational as part of enhanced exhaust system				
15	Exhaust Fan		Not operational as part of enhanced exhaust system				
16	Exhaust Fan		Not operational as part of enhanced exhaust system				
17	Exhaust Fan		Not operational as part of enhanced exhaust system				
18	Exhaust Fan		Not operational as part of enhanced exhaust system				
19	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient
22	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

APPENDIX C

TANK EMISSIONS CALCULATIONS

Identification

Identification No.:	Tank-10
City:	Orlando
State:	FL
Company:	Foamex,L.P.
Type of Tank:	Horizontal Fixed Roof

Tank Dimensions

Shell Length (ft):	37
Diameter (ft):	7
Volume(gallons):	10651
Is tank underground? (Y/N):	N
Turnovers:	6
Net Throughput (gal/yr):	65455

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good

Breather Vent Settings

Vacuum Setting (psig):	0.00
Pressure Setting (psig):	0.00

Meteorological Data Used in Emission Calculations: Orlando, Florida

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Methylene chloride	All	74.41	68.90	79.92	72.42	7.8380	6.9245	8.8479	84.940			84.94	Option 2: A=7.4090, B=1325.900, C=252.600

Annual Emissions Report

Liquid Contents	Losses (lbs.): Standing	Withdrawal	Total
Methylene chloride	5026.50	1037.55	6064.05
Total:	5026.50	1037.55	6064.05

Attachment C

Revised Pages to Volume II: Dispersion Modeling Analysis of Original Permit Application

50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this analysis and the permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process.

In order to increase production the rebond process will be modified to include an additional mold and relocated approximately 60 feet to the noetheast of is current location. The modified rebond process will require three 15,000 CFM exhaust fans, located in the ceiling above the process, with stack heights of 53 feet above ground level. The two existing 1,000 CFM fans will no longer serve the rebond process. The modification to the rebond process will also include a recirculating dust filter/collection system.

2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 1 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Methylene chloride emissions from Tank 10 were calculated using EPA's Storage Tank Emissions Calculation program, TANKS version 2.0, and are presented in the permit application. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed. Based on previous submittals to FDEP, methylene chloride emissions from Tank 10 are not addressed in this dispersion modeling analysis.

3.0 DISPERSION MODELING METHODOLOGY

As previously stated, the dispersion modeling analysis presented in this report only addresses the following emissions from the Foamex facility:

- Methylene Chloride from the slabstock foam manufacturing process and from the gluing process during foam fabrication operations;
- Toluene Diisocyanate from the slabstock foam manufacturing process and rebond foam manufacturing process; and
- 1,1,1-Trichloroethane from the gluing process during foam fabrication operations.

The methodology followed in the dispersion modeling analysis is as follows:

1) A downwash/Good Engineering Practice (GEP) stack height analysis was conducted utilizing EPA's new Building Profile Input Program (BPIP), dated 94074.
2) Emission rates for each compound and process were calculated based on maximum daily and annual usage of each compound.
3) The EPA Industrial Source Complex - Short Term model (ISCST2), dated 93109, was used to predict the 8-hour and 24-hour impacts of each compound and annual impacts of methylene chloride from the facility.
4) The resulting concentrations were then compared with FDEP's **Ambient Reference Concentrations (ARC's)** for each compound to determine if they are below the **ARC's**.

4.0 SOURCE DATA

The source data used in the dispersion modeling analysis are presented in Table 3 below. The location of each source is shown in Figure 2.

Table 3. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Stack Location Coordinates[b] (feet) East	North
1	Foam Line Stack	125	33.75	30,000	80	80.481	577	393
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	500	56
3	Exhaust Fan	Not operational as part of enhanced exhaust system					356	319
4	Exhaust Fan	Not operational as part of enhanced exhaust system					356	363
5	Exhaust Fan	Not operational as part of enhanced exhaust system					356	393
6	Exhaust Fan	Not operational as part of enhanced exhaust system					356	445
7	Exhaust Fan	53	43.5	50,000	80	80.744	356	501
8	Exhaust Fan	Not operational as part of enhanced exhaust system					356	554
9	Exhaust Fan	Not operational as part of enhanced exhaust system					356	603
10	Exhaust Fan	Not operational as part of enhanced exhaust system					356	633
11	Exhaust Fan	Not operational as part of enhanced exhaust system					484	319
12	Exhaust Fan	53	43.5	50,000	80	80.744	484	363
13	Exhaust Fan	Not operational as part of enhanced exhaust system					484	393
14	Exhaust Fan	Not operational as part of enhanced exhaust system					484	445
15	Exhaust Fan	Not operational as part of enhanced exhaust system					484	501
16	Exhaust Fan	Not operational as part of enhanced exhaust system					484	554
17	Exhaust Fan	Not operational as part of enhanced exhaust system					484	603
18	Exhaust Fan	Not operational as part of enhanced exhaust system					484	633
19	Exhaust Fan	53	43.5	50,000	80	80.744	600	336.5
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	590
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	494	590
22	**Rebond Exhaust Fan**	53	24	15,000	80	79.577	524	590

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

b. See Figure 2 for stack locations.

Figure 2. Stack Locations, Downwash Structures, and Property Line Receptors
Foamex, L.P. - Orlando Facility

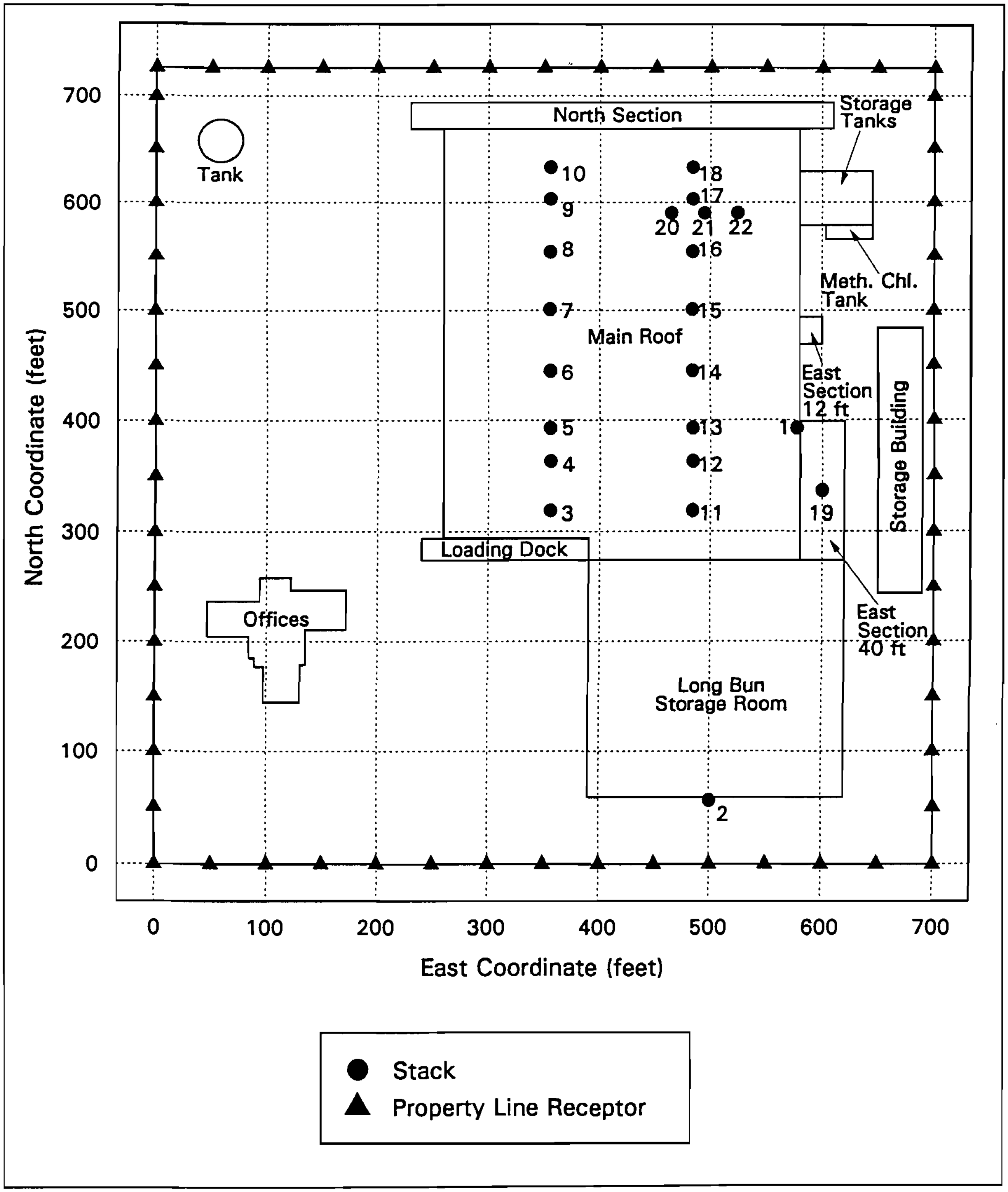


Table 5. GEP Stack Heights and Modeled Stack Heights
Foamex, L.P. - Orlando Facility

Source Number	Description	Stack Heights Above Ground Level: GEP (feet)	Modeled (feet)
1	Foam Line Stack	125	125
2	Long Bun Storage Room Stack	125	125
3	Exhaust Fan	Not modeled[a]	
4	Exhaust Fan	Not modeled[a]	
5	Exhaust Fan	Not modeled[a]	
6	Exhaust Fan	Not modeled[a]	
7	Exhaust Fan	125	53
8	Exhaust Fan	Not modeled[a]	
9	Exhaust Fan	Not modeled[a]	
10	Exhaust Fan	Not modeled[a]	
11	Exhaust Fan	Not modeled[a]	
12	Exhaust Fan	125	53
13	Exhaust Fan	Not modeled[a]	
14	Exhaust Fan	Not modeled[a]	
15	Exhaust Fan	Not modeled[a]	
16	Exhaust Fan	Not modeled[a]	
17	Exhaust Fan	Not modeled[a]	
18	Exhaust Fan	Not modeled[a]	
19	Exhaust Fan	125	53
20	Rebond Exhaust Fan	90	53
21	Rebond Exhaust Fan	90	53
22f	**Rebond Exhaust Fan**	**100**	**53**

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

11.0 COMPOUNDS AND APPLICABLE STANDARDS

The impacts of the compounds listed in Table 6 below were examined in this dispersion modeling analysis. The resulting concentrations were then compared with the listed applicable FDEP ARC's to determine if they are below the ARC's.

Table 6. Compounds Analyzed and ARC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	FDEP ARC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,740
	24-hour	414
	Annual	2.0
Toluene Diisocyanate	8-hour	0.4
	24-hour	0.09
1,1,1-Trichloroethane	8-hour	19,000
	24-hour	4,524

12.0 CONCENTRATIONS CALCULATED

For comparison with the FDEP ARC's the maximum concentrations were calculated for each compound by the ISCST2 model for the 8-hour and 24-hour averaging times. The annual average concentration was also calculated for methylene chloride by the ISCST2 model by using the PERIOD keyword in the averaging times parameter list.

Distributed 8-hour average total methylene chloride emission rates:

Foam Line Stack	=	1,050.0 lb/hr		
Long Bun Storage Room Stack	=	612.5 lb/hr		
3 Exhaust Fans	=	87.5 lb/hr + 2.17 lb/hr	=	89.67 lb/hr
Each Exhaust Fan	=	89.67 lb/hr ÷ 3	=	29.89 lb/hr

24-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 24 hr/day
= 583.333 lb/hr

Distributed 24-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	583.333 lb/hr x 60%	=	350.0 lb/hr
Long Bun Storage Room Stack	=	583.333 lb/hr x 35%	=	204.167 lb/hr
3 Exhaust Fans	=	583.333 lb/hr x 5%	=	29.167 lb/hr

24-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.17 lb/hr

Distributed 24-hour average total methylene chloride emission rates:

Foam Line Stack	=	350.0 lb/hr		
Long Bun Storage Room Stack	=	204.167 lb/hr		
3 Exhaust Fans	=	29.167 lb/hr + 2.17 lb/hr	=	31.337 lb/hr
Each Exhaust Fan	=	31.337 lb/hr ÷ 3	=	10.4457 lb/hr

Maximum annual slabstock foam production methylene chloride usage = 720,000 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 720,000 lb/yr ÷ 8,760 hr/yr
= 82.192 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	82.192 lb/hr x 60%	=	49.3152 lb/hr
Long Bun Storage Room Stack	=	82.192 lb/hr x 35%	=	28.7672 lb/hr
3 Exhaust Fans	=	82.192 lb/hr x 5%	=	4.1096 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	**49.3152** lb/hr		
Long Bun Storage Room Stack	=	**28.7672** lb/hr		
3 Exhaust Fans	=	**4.1096** lb/hr + 0.3676 lb/hr	=	**4.4772** lb/hr
Each Exhaust Fan	=	**4.4772** lb/hr ÷ 3	=	**1.4924** lb/hr

Maximum slabstock foam production TDI emission rate = 0.37 lb/hr

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production TDI emissions = 0.37 lb/hr x 6.0 hr/day = 2.22 lb/day

TDI emission factor = 0.000028 lb emitted/lb used

Maximum hourly rebond process TDI usage rate = **328** lb/hr

Maximum hourly rebond process TDI emission rate = **328** lb/hr x 0.000028 lb/lb = **0.0092** lb/hr

Maximum daily rebond process hours of operation = 24.0 hr/day

8-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 8 hr/day	=	**0.2775** lb/hr
3 Rebond Exhaust Fans	=	**0.0092** lb/hr x **8** hr/day ÷ 8 hr/day	=	**0.0092** lb/hr
Each Rebond Exhaust Fan	=	**0.0092** lb/hr ÷ **3**	=	**0.0031** lb/hr

24-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 24 hr/day	=	0.0925 lb/hr
3 Rebond Exhaust Fans	=	**0.0092** lb/hr x 24 hr/day ÷ 24 hr/day	=	**0.0092** lb/hr
Each Rebond Exhaust Fan	=	**0.0092** lb/hr ÷ **3**	=	**0.0031** lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum 1,1,1-trichloroethane content of glue = 81%

Maximum hourly 1,1,1-trichloroethane emission rate = 3.1 lb/hr x 81% = 2.5 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	=	2.5 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.5 lb/hr
Each Exhaust Fan	=	2.5 lb/hr ÷ 3	=	0.83333 lb/hr

24-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	= 2.5 lb/hr x 24 hr/day ÷ 24 hr/day	= 2.5 lb/hr
Each Exhaust Fan	= 2.5 lb/hr ÷ 3	= 0.83333 lb/hr

Table 7. Emission Rates
Foamex, L.P. - Orlando, Florida

		Emission Rates for Compounds Modeled						
		Methylene Chloride			Toluene Diisocyanate		1,1,1-Trichloroethane	
Source Number	Source Description	8-hour (lb/hr)	24-hour (lb/hr)	Annual (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)
1	Foam Line Stack	1,050.0	350.0	49.3152	0.2775	0.0925	0.0	0.0
2	Long Bun Storage Room Stack	612.5	204.167	28.7672	0.0	0.0	0.0	0.0
3	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Exhaust Fan	29.89	10.4457	1.4924	0.0	0.0	0.83333	0.83333
8	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Exhaust Fan	29.89	10.4457	1.4924	0.0	0.0	0.83333	0.83333
13	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Exhaust Fan	29.89	10.4457	1.4924	0.0	0.0	0.83333	0.83333
20	Rebond Exhaust Fan	0.0	0.0	0.0	0.0031	0.0031	0.0	0.0
21	Rebond Exhaust Fan	0.0	0.0	0.0	0.0031	0.0031	0.0	0.0
21	**Rebond Exhaust Fan**	**0.0**	**0.0**	**0.0**	**0.0023**	**0.0023**	**0.0**	**0.0**

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP ARC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP ARC's. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's **8-hour and 24-hour ARC's.**

The resulting maximum annual ground level concentration for methylene chloride is 2.73 $\mu g/m^3$, which is greater than the FDEP annual ARC for methylene chloride of 2.0 $\mu g/m^3$. Therefore, based on Foamex's commitment to reduce the annual usage of methylene chloride as a blowing agent after five years to less than half of the current usage rate of 720,000 lbs/yr, a risk assessment was conducted to show that the exposure to the estimated methylene chloride emissions from the facility over a lifetime (70 years) pose less than a one-in-a-million increased cancer risk. The risk assessment was submitted to FDEP as an attachment to Foamex's Request for Permit Ammendment, dated June XX, 1996.

Table 8. ISCST2 Modeling Results and Comparison with FDEP ARC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP ARC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,538.9	1,740
	24-hour	250.8	**414**
	Annual	**2.73**	**2.0**
Toluene Diisocyanate	8-hour	**0.3**	**0.4**
	24-hour	**0.05**	**0.09**
1,1,1-Trichloroethane	8-hour	10.1	**19,000**
	24-hour	6.7	**4,524**

Harding Lawson Associates

May 29, 1996

26005.F21.816

RECEIVED
MAY 30 1996
BUREAU OF
AIR REGULATION

Mr. Williard Hanks
Division of Air Resource Management
Florida Department of Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Foamex L.P.
FDEP Permit No. AC48-214902A

Dear Mr. Hanks:

On behalf of our client, Foamex, L.P., please find enclosed your copy of the "Proof of Publication" on the subject source.

Should you have any questions or comments, please do not hesitate to call.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

PKR/slw/FOAMEX596.ltr

Enclosures

cc: Alan Zahm - FDEP Central Florida District
Dennis Nester-Orange County EPD
Jack Wanat-Foamex L.P., Orlando, FL
Tom Burghardt-Foamex, L.P., Linwood, PA

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

BEST AVAILABLE COPY

The Orlando Sentinel

Published Daily
$218.09

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared SHERI L. MILLER, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a INTENT TO ISSUE ST in the matter of AC 48-214902A

in the ORANGE Court, was published in said newspaper in the issue; of 05/21/96

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sheri L. Miller

The foregoing instrument was acknowledged before me this 23 day of MAY, 19 96, by SHERI L. MILLER, who is personally known to me and who did take an oath.

Juanita Rosado

(SEAL) NOTARY PUBLIC STATE OF FLORIDA

JUANITA ROSADO
My Comm Exp. 7/13/98
Bonded By Service Ins
No. CC392006
[ ] Personally Known [ ] Other I. D.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT
AC 48-214902A

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit to Foamex L.P., 1351 Gemini Blvd., Orlando, Orange County, Florida 32821. The modifications are to reconfigure the foam fabrication operation to reduce the number of fans needed to ventilate this process, to allow a 19.1 tons per year increase in methylene chloride emissions, and to extend the expiration date of the existing construction permit to May 15, 1997. These modifications do not require a Best Available Control (BACT) determination. Air dispersion modeling shows that ground-level concentrations of methylene chloride will not exceed the Florida Administration Reference Concentration.

The department has assigned File Number 175533 to the project.

A person whose substantial interests are affected by the department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Blvd., MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a

BEST AVAILABLE COPY

Departm... have the application/request right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207 Florida Administrative Code.

The application/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
3319 Maguire Boulevard,
Suite 232,
Orlando, Florida 32803-3767

Orange County Environmental Protection Department
2002 East Michigan Street
Orlando, Florida 32806

Any person may send written comments on the proposed action to the Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

COR949019 MAY.21,1996

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

CERTIFIED MAIL

In the Matter of an
Application for Permit Amendment

DEP File No. AC 48-214902A
County: Orange

Mr. Douglas L. Terrill
Plant Manager
Foamex L.P.
1351 Gemini Boulevard
Orlando, Florida 32837

INTENT TO ISSUE

The Department of Environmental Protection gives notice of its intent to issue a permit amendment for a modification (copy attached) to the applicant's facility as detailed in the request specified, above, for the reasons stated below.

The applicant, Foamex L.P., applied on March 6, 1996, to the Department of Environmental Protection for a modification to a previously issued air construction permit for their flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32837. The permit modification will allow an increase of 19.1 tons per year in methylene chloride emissions, a reconfiguration of the foam fabrication operation that will reduce the number of ventilation fans, and an extension of the expiration date of this permit.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-210 through 62-297, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed change.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit Amendment. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit amendment.

The Department will issue the permit amendment with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Blvd., MS 35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

Mr. Douglas L. Terrill
Intent to Issue
Page Four

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that all copies of this INTENT TO ISSUE PERMIT AMENDMENT all copies were mailed by certified mail before the close of business on 5-3-96 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

5-3-96
Clerk Date

Copies furnished to:

A. Zahm, CD
D. Nester, Orange County
K. Rykowski, HLA

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

AC 48-214902A

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit modification to Foamex L.P., 1351 Gemini Blvd., Orlando, Orange County, Florida 32821. The modifications are to reconfigure the foam fabrication operation to reduce the number of fans needed to ventilate this process, to allow a 19.1 tons per year increase in methylene chloride emissions, and to extend the expiration date of the existing construction permit to May 15, 1997. These modifications do not require a Best Available Control (BACT) determination. Air dispersion modeling shows that ground-level concentrations of methylene chloride will not exceed the Florida Ambient Reference Concentration.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Blvd., MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this

Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/ request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

The application/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Orange County Environmental Protection Department
2002 East Michigan Street
Orlando, Florida 32806

Any person may send written comments on the proposed action to the Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

DRAFT

May XX, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas L. Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit
Permit No. AC 48-214902A

The Department is in receipt of your March 5 and March 15 letters requesting the permit for your flexible polyurethane foam manufacturing facility located at 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821, be modified. The requested modifications are to allow a 19.1 TPY increase in methylene chloride emissions; to reconfigure the foam fabrication operation so that 14 of the roof ventilation fans will no longer be needed; and to extend the expiration date of the permit so that a carbon dioxide system which will replace part of the methylene chloride used in the process can be installed. Part of these requests is acceptable. The Department will want you to obtain a permit to operate the plant before the carbon dioxide system is fully operational. In response to your request, permit No. AC 48-214902 is modified as follows:

EXPIRATION DATE

From: May 15, 1996
To: May 15, 1997

SPECIFIC CONDITION NO. 1

From:

The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling

DRAFT

50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

The enhanced exhaust systems shall **meet or exceed the following specifications.** The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; **three** roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

SPECIFIC CONDITION NO. 2

From:

The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 513,090 lbs/yr (256.6 TPY) methylene chlorides; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

The chemicals used **in the manufacturing process** at the facility shall not exceed the following quantities during any twelve month period: **551,192** lbs/yr (**275.6** TPY) methylene chlorides; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1,-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

DRAFT

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITION NO. 4

From:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	2,222.43	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	89.79
IV.	Foam Fabrication Operations/		
	methylene chloride	5.1	14.41
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02

DRAFT

VI.	Tank Storage (Tank No. 10) methylene chloride	0 .66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.43	**280.13**
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	**165.36**
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	**96.46**
IV.	Foam Fabrication Operations/ methylene chloride	5.32	**15.39**
	1,1,1-trichloroethane	2.5	1.86

V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

Specific Condition No. 8

From:

An application for an operation permit shall be submitted to the Department's Central District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit. (Rules 62-4.055 and 62-4.220, F.A.C.)

To:

The permittee shall comply with the application requirements in Rule 62-213.420, F.A.C., for Title V operation permits.

A copy of this letter shall be attached to permit No. AC 48-214902 and shall become a part of that permit.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes, Director
Division of Air Resources
Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that all copies of this INTENT TO ISSUE PERMIT AMENDMENT all copies were mailed by certified mail before the close of business on ______________ to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

____
Clerk Date

HLR/wh/t

Attachment: HLA March 4, 1996, letter.
HLA March 15, 1996, letter.

Copies furnished to:

A. Zahm, CD
D. Nester, Orange County
K. Rykowski, HLA

TRANSMITTAL

To: Mr. Willard Hanks
Mr. C.H. Fancy, Jr.
FDEP - Tallahassee

From: Joe Tessitore
Kay Rykowski
HLA Orlando

Date: March 5, 1996

Subject: Foamex, Orlando Facility

Project Number: 26005.F21.816

RECEIVED
MAR 06 1996
BUREAU OF
AIR REGULATION

Please find enclosed:

- A letter request for amendment to Permit AC48-214902 for the Foamex foam manufacturing facility in Orlando;
- Attachment A - Revised Pages to Volume I of the Original Permit Application (1 copy);
- Attachment B - Revised Pages to Volume II: Dispersion Modeling Analysis, of the Original Permit Application (1 copy)
- Attachment C - Output Listings from Revised Modeling (Appendixes D,E,F,I and J of Volume II of Original Permit Application) (1 copy)
- Check No. 487130 in the amount of $1000.00 for applicaton processing fee.

As we discussed during our meeting on February 22, this amendment is requested to allow an increase in production at the facility, in preparation for installation of a new manufacturing technology. The proposed increase in methylene chloride usage results in an increase in the maximum annual groundlevel concentration of approximately 10%, however this maximum concentration does not exceed the FDEP Acceptable Ambient Concentration.

If you have any questions regarding this submittal, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

pkr\trans001.doc

Attachments

cc: Doug Terrill, Foamex; Orlando, Florida
Tom Burghardt, Foamex; Linwood, Pennsylvania

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

Harding Lawson Associates

March 4, 1996

26005.F21.816

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED

MAR 06 1996

BUREAU OF
AIR REGULATION

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

INTRODUCTION

This letter is to request an amendment to Construction Permit AC48-214902, issued to Foamex, L.P. This letter presents a summary of the requested changes to Specific Conditions 1, 2, and 4 issued by FDEP. As discussed with you during our meeting on February 22, the requested changes include an increase in the annual methylene chloride usage and a modification to the enhanced exhaust system for the foam fabrication operations. This amendment is requested to allow Foamex to increase production at their Orlando facility in the short term, in preparation for future installation of an alternate manufacturing technology that will greatly reduce methylene chloride emissions.

As discussed in the following comments and supported by the attachments, the predicted maximum ground level concentration for methylene chloride and 1,1,1-trichloroethane do not exceed the FDEP Acceptable Ambient Air Concentrations (AAAC) as a result of the requested changes to Specific Conditions 1, 2, and 4.

COMMENT 1

Foamex requests a change to reduce the number of exhaust fans for the foam fabrication operations from seventeen exhaust fans to three exhaust fans. As discussed in Foamex's First and Second Progress Reports (June 30, 1995 and January 31, 1996, respectively), this change is requested to minimize energy consumption and capital and operating costs. The foam fabrication operations will be isolated to smaller areas, thereby reducing the number of exhaust fans required to exhaust the foam fabrication emissions to only three fans rather than seventeen as outlined in the original permit application. The fourteen existing roof exhaust fans which will not be used for the foam fabrication exhaust system will be blocked off. The three fans to be used for the foam fabrication operations exhaust system are source numbers 7, 12, and 19 as identified in the original permit application and in the attached supporting documentation.

The new exhaust fan configuration has the minimal effect on the dispersion modeling analysis of slightly concentrating the foam fabrication operations emissions to the area of the three exhaust fans

as opposed to these emission being spread out over the area of the seventeen fans as originally proposed. The dispersion modeling has been revised to account for the new exhaust fan configuration. This change only impacts the modeling results for methylene chloride and 1,1,1-trichloroethane, the only pollutants emitted from the foam fabrication exhaust fans. The results of the revised modeling analysis, presented below, show that the 8-hour and 24-hour maximum ground level concentrations for methylene chloride and 1,1,1-trichloroethane are below the applicable FDEP AAAC's. The annual methylene chloride ground level concentration will be discussed in Comment 2.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour 24-hour	1,538.9 250.8	1,740 417.6
1,1,1-Trichloroethane	8-hour 24-hour	10.1 6.7	38,200 9,168

The revised pages, based on the requested changes, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 1 is given below.

From:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities

meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

COMMENT 2

Foamex requests a change in the limits on the annual quantity of methylene chloride used at the facility stated in Specific Condition 2. An increase in the annual usage rate of methylene chloride from 513,090 lbs/yr (256.6 TPY) to 551,192 lbs/yr (275.6 TPY) is requested to maximize foam production without exceeding the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. The dispersion modeling analysis has been revised based on the requested increase in the annual methylene chloride usage limit and the requested change in the foam fabrication operations exhaust system as discussed in Comment 1. The requested annual increase only affects the annual average emission rates and does not affect the maximum hourly or daily emissions of methylene chloride. The results of the revised modeling analysis, presented below, show that the maximum annual ground level concentration for methylene chloride does not exceed the FDEP annual AAAC for methylene chloride.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	Annual	2.09998	2.1

The revised pages, based on the requested change, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 2 is given below.

From:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 551,192 lbs/yr (275.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

COMMENT 3

As a result of the requested increase in annual methylene chloride usage discussed in Comment 2 above, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The calculations supporting this change are provided in the attached revised pages of Volume I of the permit application. The requested change in Specific Condition 4 is given below.

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

   AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

	Emissions	
Chemicals	lbs/hr	TPY
methylene chloride	2,222.43	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	89.79
IV.	Foam Fabrication Operations/ methylene chloride	5.1	14.41
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS: 280.13

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32	15.39
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

CLOSING

Should you require any additional information or have any questions regarding these issues please contact Kay Rykowski at (407)851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration Number 23374

JMW/JLT/jmw
26005W02.DOC/

Attachments:
- A. Revised pages to Volume I of Original Permit Application
- B. Revised pages to Volume II: Dispersion Modeling Analysis of Original Permit Application
- C. Output Listings from Revised Modeling (Appendixes D, E, F, I, and J of Volume II of Original Permit Application)

cc: Mr. Doug Terrill, Foamex, L.P., Orlando, Florida
Mr. Tom Burghardt, Foamex, L.P., Linville, Pennsylvania

Attachment A

Revised Pages to Volume I of Original Permit Application

a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three 50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication and processing operations throughout the rest of the facility before shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is

compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 3.3 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed.

2.2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the operation of the steam boiler are proposed.

2.2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 3.4 provides a listing of the individual heaters and the rated capacity of each heater.

2.2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions from the gluing process are vented to the atmosphere through the three ceiling exhaust fans located in the areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.2.1.

2.3 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

Table 2.1. Summary of Emission Sources
Foamex, L.P. - Orlando, Florida

Process Emission Source	Emission Point Number	Description
Slabstock Polyurethane Foam Production	1	Foam Line Stack
Slabstock Polyurethane Foam Production	2	Long Bun Storage Room Stack
Not operational as part of enhanced exhaust system	3	Exhaust Fan
Not operational as part of enhanced exhaust system	4	Exhaust Fan
Not operational as part of enhanced exhaust system	5	Exhaust Fan
Not operational as part of enhanced exhaust system	6	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	7	Exhaust Fan
Not operational as part of enhanced exhaust system	8	Exhaust Fan
Not operational as part of enhanced exhaust system	9	Exhaust Fan
Not operational as part of enhanced exhaust system	10	Exhaust Fan
Not operational as part of enhanced exhaust system	11	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	12	Exhaust Fan
Not operational as part of enhanced exhaust system	13	Exhaust Fan
Not operational as part of enhanced exhaust system	14	Exhaust Fan
Not operational as part of enhanced exhaust system	15	Exhaust Fan
Not operational as part of enhanced exhaust system	16	Exhaust Fan
Not operational as part of enhanced exhaust system	17	Exhaust Fan
Not operational as part of enhanced exhaust system	18	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	19	Exhaust Fan
Rebond Polyurethane Foam Production	20	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	21	Rebond Exhaust Fan
Tank Storage	22	Tank #10
Steam Boiler	23	Boiler Stack
Environmental Heating	24	Natural Gas Heaters

To calculate the maximum hourly usage rate of methylene chloride it is necessary to define the "worst case" maximum daily usage of methylene chloride. The "worst case" maximum daily methylene chloride usage is 14,000 lb/day.

The maximum hourly usage rate of methylene chloride is then calculated as follows:

Maximum hourly usage = 14,000 lb/day ÷ 6 hr/day = 2,333.33 lb/hr

The maximum annual usage of methylene chloride at the facility will be limited to 551,192 lbs/yr.

3.1.2 Rebond Polyurethane Foam Production

A summary of the typical material input and production rates for the Rebond process are provided in Table 3.2.

Table 3.2. Rebond Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Raw Materials:		
Scrap Foam	5,608	0
Polyol	459	0
TDI	164	0
Product:		
Rebond Foam Product	0	6,231

3.1.3 Tank Storage

As stated previously in Section 2.2.3 of this application, the Foamex facility includes eleven above ground storage tanks. The current estimated maximum annual material throughput for each tank is shown in Table 3.3 below.

Table 3.3. Tanks Storage Process Rates
Foamex, L.P. - Orlando, Florida

Tank Number	Product	Height (feet)	Diameter (feet)	Throughput (lbs/yr)
1	Polyol	35	12	Note 1
2	Polyol	35	12	Note 1
3	TDI	35	12	Note 2
4	Polyol	35	12	Note 1
5	Polyol	35	12	Note 1
6	TDI	35	12	Note 2
7	Empty	16	10.5	0
8	Polymer	16	10.5	1,000,000
9	Empty	35	12	0
10	Methylene Chloride	37 (long)	7	551,192
11	Empty	30 (long)	7	0

Note 1: Total Polyol Throughput = 15,000,000 lbs/yr
Note 2: Total TDI Throughput = 10,000,000 lbs/yr

3.1.4 Steam Boiler

The industrial boiler used for steam production is rated at 100 hp and is fired by natural gas. The boiler is used to convert an average of 1,570 gallons of water to steam each day for the Rebond process. The maximum heat input for the boiler is 4.2 mmBtu/hr with a maximum natural gas consumption rate of 4,200 cf/hr. The maximum operating schedule for the boiler is 8760 hrs/yr.

3.1.5 Environmental Heating

There are thirteen indirect natural gas fired heaters at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The total maximum heat input for the heaters is 1.85 mmBtu/hr, with a maximum natural gas usage rate of 1850 cf/hr. On an average basis, the natural gas usage rate is 200 cf/hr. Table 3.4 provides a listing of the individual heaters and heat input rates.

Table 3.4. Indirect Fired Heaters Process Rates
Foamex, L.P. - Orlando, Florida

Heater Number	Manufacturer	Model Number	Operational?	Maximum Heat Input (Btu/hr)
1	Bryant	200-341	Yes	200,000
2	Bryant	200-341	No	200,000
3	Hastings	GF200XE	Yes	200,000
4	Hastings	GF200XE	No	200,000
5	Hastings	GF200XE	Yes	200,000
6	Hastings	GF200XE	Yes	200,000
7	Hastings	GF200XE	Yes	200,000
8	Hastings	GF200XE	Yes	200,000
9	Hastings	GF200XE	Yes	200,000
10	Hastings	GF200XE	Yes	200,000
11	Bryant	200-341	No	200,000
12	Bryant	200-341	No	200,000
13	Peereless	1067	Yes	250,000
TOTAL (operational heaters only)				1,850,000

3.1.6 Foam Fabrication Operations

During Foam Fabrication Operations, the foam buns manufactured during the Slabstock process are cut and glued according to customer specifications. Approximately 3.1 lbs/hr of glue is used during these operations. The maximum annual usage rate of glue at the facility is 4,600 lb/yr, or 2.3 tons/yr.

3.2 Emissions Calculations

3.2.1 Slabstock Polyurethane Foam Production

3.2.1.1 Methylene Chloride

As stated in Section 3.1.1 of this application, methylene chloride represents the only significant emissions associated with this process. Currently, it is the only blowing agent used. In this process, all of the blowing agent used is emitted to the atmosphere and does not end up in the foam product. Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. The total uncontrolled process emissions of methylene chloride on an annual basis can, therefore, be estimated directly from the annual methylene chloride usage rate in Section 3.1.1.

Maximum annual methylene chloride usage = 551,192 lbs/yr

Maximum annual methylene chloride emissions = 551,192 lbs/yr ÷ 2,000 lbs/ton
= 275.6 tons/yr

The values shown above represent the total methylene chloride emissions from the slabstock foam production process. However, these emissions are distributed between each of the two stacks serving the process, the Foam Line Stack and the Long Bun Storage Room Stack, and the three exhaust ceiling exhaust fans serving the Foam Fabrication Operations area. Both short term and long term emission rates must be calculated for the Foam Line Stack and Long Bun Storage Room Stack. Emissions calculations for the Foam Fabrication Operations are included under that heading in Section 3.2.6. Long term or annual emissions from the Foam Line and Long Bun Storage Room can be calculated by multiplying the distribution factors for each (60% and 35%, respectively) by the total maximum annual emissions specified above.

Foam Line Stack:

Maximum annual methylene chloride emissions	= 551,192 lbs/yr x 0.60
	= 330,715.2 lb/yr
Maximum annual methylene chloride emissions	= 330,715.2 lbs/yr ÷ 2,000 lbs/ton
	= 165.36 tons/yr

Long Bun Storage Room Stack:

Maximum annual methylene chloride emissions	= 551,192 lbs/yr x 0.35
	= 192,916.85 lb/yr
Maximum annual methylene chloride emissions	= 192,916.85 lbs/yr ÷ 2,000 lbs/ton
	= 96.46 tons/yr

The first step in developing an estimate of the maximum hourly emission rate for the Foam Line and Long Bun Storage Room is to define the "worst case" maximum daily methylene chloride usage. For this purpose, the "worst case" daily usage of methylene chloride, as defined in Section 3.1.1 of this application, is 14,000 lbs/day over six hours of operation (2,333.33 lb/hr). Assuming that 60% of this quantity is released during the pour period in the foam line enclosure as the foam travels along the process line conveyor before it reaches the Long Bun Storage Room, the Foam Line Stack emits a total of 8,400 pounds of methylene chloride over the six hour pour period. As the buns enter the Long Bun Storage Room, the remaining methylene chloride which is contained in the foam material begins to be released. Assuming that 35% of the methylene chloride used during the pour is released in the Long Bun Storage Room during the cure period, a total of 4,900 pounds of methylene chloride is emitted from the Long Bun Storage Room Stack. The 5% (700 pounds) of the methylene chloride remaining after the cure period in the foam product after it is removed from the Long Bun Storage Room is emitted during the foam fabrication operations through the three ceiling exhaust fans located in the foam fabrication areas.

As stated previously, the Long Bun Storage Room emissions decay at an exponential rate over the foam cure period. Appendix A provides a detailed analysis of the actual emission rate profile for the Long Bun Storage Room. However, for emission calculation purposes, a more simple approach representing a worst case scenario is used. This approach ignores the decay profile and the foam cure period and instead assumes that the total quantity of emissions is released at a steady rate during the pour period only. Because the length of the pour period is shorter than the cure period, the resulting maximum short term emission rate is higher. Thus, this approach represents a worst case scenario. The following provides a simple summary of this mass balance.

Maximum methylene chloride usage	= 14,000 lbs
Maximum Foam Line Stack methylene chloride emissions	= 8,400 lbs
Maximum Long Bun Storage Room Stack methylene chloride emissions	= 4,900 lbs
Maximum methylene chloride emissions from three exhaust fans	= 700 lbs
Maximum Total methylene chloride emissions	= 14,000 lbs

Using the worst case assumption that the total emissions for both the Foam Line Stack and Long Bun Storage Room Stack occur during the six hour pour period, the maximum hourly emission rates are calculated as follows:

Foam Line Stack:

Maximum hourly methylene chloride emissions = 8,400 lbs ÷ 6 hrs
= 1,400 lb/hr

Long Bun Storage Room Stack:

Maximum hourly methylene chloride emissions = 4,900 lbs ÷ 6 hrs
= 816.67 lb/hr

As stated above, emissions from the three exhaust fans during foam fabrication operations are included under the heading Foam Fabrication Operations in Section 3.2.6.

3.2.1.2 Toluene Diisocyanate

As stated above, the Slabstock process involves the mixture of various process chemicals along with an auxiliary blowing agent to produce polyurethane foam. The calculations presented above provide an estimate of the emissions of the auxiliary blowing agent, methylene chloride. All of the methylene chloride used is volatilized and thus emitted from the process. The remaining process chemicals listed in the mass balance, shown in Section 3.1.1, combine to form the foam product. In 1991, Foamex conducted a stack test for emissions of methylene chloride and toluene diisocyanate (TDI). The test results, included in Appendix B, revealed that a small quantity of TDI is emitted from the process. Table 3.5 provides a summary of the test results.

version 1.0, which is based on the calculation procedures specified in AP-42 section 12. The calculations were conducted based on the maximum annual methylene chloride throughput for the facility of 551,192 lb/yr. The calculations represented in Appendix C were conducted based on the existing tank design, which includes a breather vent with no pressure setting. Thus breathing losses, also referred to as standing losses, are not limited in any way. The following provides a summary of the results of the calculations. However Foamex proposes to install a pressure relief vent for this tank such that standing losses would be minimized.

Total standing losses	=	4992.73 lbs/yr
Total working losses	=	844.16 lbs/yr
Maximum annual emissions	=	(4992.73 lbs/yr) + (844.16 lbs/yr)
	=	5836.89 lbs/yr
	=	(5836.89 lbs/yr) ÷ (2000 lbs/ton)
	=	2.9 tons/yr
Annual average emission rate	=	(5836.89 lbs/yr) ÷ (8760 hrs/yr)
	=	0.66 lbs/hr

3.2.4 Steam Boiler

Emissions from the Steam Boiler are generated through natural gas combustion. Appendix D provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.6 provides a summary of the results of these calculations.

Table 3.6. Steam Boiler Emission Rates
Foamex, L.P. • Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.021	0.092
Sulfur dioxide	0.0025	0.011
Nitrogen oxide	0.59	2.58
Carbon monoxide	0.147	0.64
Total hydrocarbons	0.013	0.055

3.2.5 Environmental Heating

Emissions from Environmental Heating are generated through natural gas combustion. Appendix E provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.7 provides a summary of the results of these calculations.

Table 3.7. Environmental Heating Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.00925	0.00185
Sulfur dioxide	0.00111	0.000222
Nitrogen oxide	0.259	0.0518
Carbon monoxide	0.06475	0.01295
Total hydrocarbons	0.00555	0.00111

3.2.6 Foam Fabrication Operations

3.2.6.1 Methylene Chloride

As stated above, after the foam bun cure period ends 5% of the total methylene chloride used is still retained in the foam buns. This quantity is not released until the buns leave the Long Bun Storage Room and are cut or processed during Foam Fabrication operations. This remaining 5% is emitted from the foam into the areas isolated for foam fabrication operations and discharged to the atmosphere through the three ceiling exhaust fans located in these areas. Further, since an inventory of foam product is always present in the foam fabrication areas, these emissions are released at a constant rate throughout the year. The maximum annual emissions and maximum hourly emission rates for these emissions from the three foam fabrication operations exhaust fans are calculated as follows:

Maximum annual emissions	=	551,192 lbs/yr x 0.05
	=	27,559.6 lbs/yr
	=	13.78 tons/yr
Maximum hourly emissions	=	27,559.6 lbs/yr ÷ 8,760 hr/yr
	=	3.15 lb/hr

In the gluing process Foamex uses a methylene chloride based glue, therefore, methylene chloride emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum methylene chloride content of the glue is 70% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the methylene chloride emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.70
	=	2.17 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.70 ÷ 2,000 lbs/ton
	=	1.61 tons/yr

The total methylene chloride emissions from the foam fabrication operations are calculated as follows:

Maximum hourly emissions	=	3.15 lb/hr + 2.17 lbs/hr

	=	5.32 lbs/hr
Maximum annual emissions	=	13.78 tons/yr + 1.61 tons/yr
	=	15.39 tons/yr

3.2.6.2 1,1,1-Trichloroethane

In the gluing process Foamex may also use a 1,1,1-trichloroethane based glue, therefore, 1,1,1-trichloroethane emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum 1,1,1-trichloroethane content of the glue is 81% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the 1,1,1-trichloroethane emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.81
	=	2.5 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.81 ÷ 2,000 lbs/ton
	=	1.86 tons/yr

3.2.7 Emissions Summary

A summary of the maximum hourly and annual emission rates for each process is provided in Table 3.8. Emission rates calculated on an 8-hour average and 24-hour average are also provided in Volume II of this application, the Dispersion Modeling Analysis, which is submitted under separate cover.

Table 3.8. Emissions Summary
Foamex, L.P. - Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/hr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	2216.67	261.82	N/A	N/A	2216.67	261.82
	Tank Storage	0.66	2.92	N/A	N/A	0.66	2.92
	Foam Fabrication	5.32	15.39	N/A	N/A	5.32	15.39
	Subtotal	2222.65	280.13	N/A	N/A	2222.65	280.13
1,1,1-Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.404	N/A	N/A	0.37	0.404
	Rebond Process	0.0046	0.02	N/A	N/A	0.0046	0.02
	Subtotal	0.3746	0.424	N/A	N/A	0.3746	0.424
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2).
2. Reference applicable emission standards and units (e.g. Rule 17-2.6000(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input).
3. Calculated from operating data and applicable standard.
4. Emission, if source operated without control (See Section V, Item 3).

3.3 Emission Stack Data

Table 3.9 provides a summary of the geometry and flow characteristics for each stack located at the Foamex, L.P. facility.

Table 3.9. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. · Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Water Vapor Content
1	Foam Line Stack	125	33.75	30,000	80	80.481	Ambient
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	Ambient
3	Exhaust Fan		Not operational as part of enhanced exhaust system				
4	Exhaust Fan		Not operational as part of enhanced exhaust system				
5	Exhaust Fan		Not operational as part of enhanced exhaust system				
6	Exhaust Fan		Not operational as part of enhanced exhaust system				
7	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
8	Exhaust Fan		Not operational as part of enhanced exhaust system				
9	Exhaust Fan		Not operational as part of enhanced exhaust system				
10	Exhaust Fan		Not operational as part of enhanced exhaust system				
11	Exhaust Fan		Not operational as part of enhanced exhaust system				
12	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
13	Exhaust Fan		Not operational as part of enhanced exhaust system				
14	Exhaust Fan		Not operational as part of enhanced exhaust system				
15	Exhaust Fan		Not operational as part of enhanced exhaust system				
16	Exhaust Fan		Not operational as part of enhanced exhaust system				
17	Exhaust Fan		Not operational as part of enhanced exhaust system				
18	Exhaust Fan		Not operational as part of enhanced exhaust system				
19	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

Attachment B

Revised Pages to Volume II: Dispersion Modeling Analysis of Original Permit Application

2.0 PROJECT DESCRIPTION

Two basic processes are used at the Foamex facility to manufacture polyurethane foam product: Slabstock Polyurethane Foam Production and Rebond Polyurethane Foam Production. These processes are used to manufacture foam products of various density, color and thickness. While the basic processes remain the same, the proportions of raw materials are modified slightly for each batch to achieve the desired product specifications. In addition to the two manufacturing processes, support operations at the facility include tank storage of process chemicals, steam boiler operation, environmental heating, and foam fabrication operations.

2.1 Slabstock Polyurethane Foam Production

In the Slabstock process, a high pressure mixing head and metering pumps are used to mix the specific raw materials required for each product. These raw materials include toluene diisocyanate (TDI), polyol, water, catalysts, surfactants, additives (such as pigments or flame retardants), and methylene chloride, an auxiliary blowing agent. The mixed raw materials are discharged into a trough where the mixture begins to react and flows down a tunnel area. Heat generated by the exothermic reaction volatilizes the methylene chloride thus allowing the foam to reach a predetermined density. The foam begins releasing methylene chloride at this point. The methylene chloride serves to reduce the foam density, or soften it, and to provide cooling of the mixture as it discharges energy during the exothermic reaction. The foam slab travels through the tunnel via a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three

50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this analysis and the permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 1 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Methylene chloride emissions from Tank 10 were calculated using EPA's Storage Tank Emissions Calculation program, TANKS version 1.0, and are presented in the permit application. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed. Based on previous submittals to FDEP, methylene chloride emissions from Tank 10 are not addressed in this dispersion modeling analysis.

2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the

operation of the steam boiler are proposed. Emissions from the steam boiler are not addressed in this dispersion modeling analysis.

2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 2 provides a listing of the individual heaters and the rated capacity of each heater. Emissions from the heaters are not addressed in this dispersion modeling analysis.

2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions of methylene chloride and 1,1,1-trichloroethane from the gluing process are analyzed in this dispersion modeling analysis. The emissions from the gluing process are vented to the atmosphere through the three ceileing exhaust fans located in areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.1.

2.7 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

3.0 DISPERSION MODELING METHODOLOGY

As previously stated, the dispersion modeling analysis presented in this report only addresses the following emissions from the Foamex facility:

- Methylene Chloride from the slabstock foam manufacturing process and from the gluing process during foam fabrication operations;
- Toluene Diisocyanate from the slabstock foam manufacturing process and rebond foam manufacturing process; and
- 1,1,1-Trichloroethane from the gluing process during foam fabrication operations.

The methodology followed in the dispersion modeling analysis is as follows:

1) A downwash/Good Engineering Practice (GEP) stack height analysis was conducted utilizing EPA's new Building Profile Input Program (BPIP), dated 94074.
2) Emission rates for each compound and process were calculated based on maximum daily and annual usage of each compound.
3) The EPA Industrial Source Complex - Short Term model (ISCST2), dated 93109, was used to predict the 8-hour and 24-hour impacts of each compound and annual impacts of methylene chloride from the facility.
4) The resulting concentrations were then compared with FDEP's AAAC's for each compound to determine if they are below the AAAC's.

4.0 SOURCE DATA

The source data used in the dispersion modeling analysis are presented in Table 3 below. The location of each source is shown in Figure 2.

Table 3. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Stack Location Coordinates[b] (feet) East	North
1	Foam Line Stack	125	33.75	30,000	80	80.481	577	393
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	500	56
3	Exhaust Fan	Not operational as part of enhanced exhaust system					356	319
4	Exhaust Fan	Not operational as part of enhanced exhaust system					356	363
5	Exhaust Fan	Not operational as part of enhanced exhaust system					356	393
6	Exhaust Fan	Not operational as part of enhanced exhaust system					356	445
7	Exhaust Fan	53	43.5	50,000	80	80.744	356	501
8	Exhaust Fan	Not operational as part of enhanced exhaust system					356	554
9	Exhaust Fan	Not operational as part of enhanced exhaust system					356	603
10	Exhaust Fan	Not operational as part of enhanced exhaust system					356	633
11	Exhaust Fan	Not operational as part of enhanced exhaust system					484	319
12	Exhaust Fan	53	43.5	50,000	80	80.744	484	363
13	Exhaust Fan	Not operational as part of enhanced exhaust system					484	393
14	Exhaust Fan	Not operational as part of enhanced exhaust system					484	445
15	Exhaust Fan	Not operational as part of enhanced exhaust system					484	501
16	Exhaust Fan	Not operational as part of enhanced exhaust system					484	554
17	Exhaust Fan	Not operational as part of enhanced exhaust system					484	603
18	Exhaust Fan	Not operational as part of enhanced exhaust system					484	633
19	Exhaust Fan	53	43.5	50,000	80	80.744	600	336.5
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	534
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	546

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

b. See Figure 2 for stack locations.

Table 5. GEP Stack Heights and Modeled Stack Heights
Foamex, L.P. - Orlando Facility

Source Number	Description	Stack Heights Above Ground Level: GEP (feet)	Modeled (feet)
1	Foam Line Stack	125	125
2	Long Bun Storage Room Stack	125	125
3	Exhaust Fan	Not modeled[a]	
4	Exhaust Fan	Not modeled[a]	
5	Exhaust Fan	Not modeled[a]	
6	Exhaust Fan	Not modeled[a]	
7	Exhaust Fan	125	53
8	Exhaust Fan	Not modeled[a]	
9	Exhaust Fan	Not modeled[a]	
10	Exhaust Fan	Not modeled[a]	
11	Exhaust Fan	Not modeled[a]	
12	Exhaust Fan	125	53
13	Exhaust Fan	Not modeled[a]	
14	Exhaust Fan	Not modeled[a]	
15	Exhaust Fan	Not modeled[a]	
16	Exhaust Fan	Not modeled[a]	
17	Exhaust Fan	Not modeled[a]	
18	Exhaust Fan	Not modeled[a]	
19	Exhaust Fan	125	53
20	Rebond Exhaust Fan	100	53
21	Rebond Exhaust Fan	100	53

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

11.0 COMPOUNDS AND APPLICABLE STANDARDS

The impacts of the compounds listed in Table 6 below were examined in this dispersion modeling analysis. The resulting concentrations were then compared with the listed applicable FDEP AAAC's to determine if they are below the AAAC's.

Table 6. Compounds Analyzed and AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,740
	24-hour	417.6
	Annual	2.1
Toluene Diisocyanate	8-hour	0.36
	24-hour	0.0864
1,1,1-Trichloroethane	8-hour	38,200
	24-hour	9,168

12.0 CONCENTRATIONS CALCULATED

For comparison with the FDEP AAAC's the maximum concentrations were calculated for each compound by the ISCST2 model for the 8-hour and 24-hour averaging times. The annual average concentration was also calculated for methylene chloride by the ISCST2 model by using the PERIOD keyword in the averaging times parameter list.

13.0 EMISSION RATES

Maximum hourly and daily usage rates were used to calculate the 8-hour and 24-hour average emission rates for each compound listed in Table 6. The maximum annual usage of methylene chloride was used to calculate the annual average emission rates of methylene chloride from the facility. The calculation of the emission rates used in the analysis is shown below and summarized in Table 7.

Compounds modeled:

Methylene Chloride
Toluene Diisocyanate (TDI)
1,1,1-Trichloroethane

Slabstock Foam Production Methylene Chloride emission distribution:

Foam Line Stack	=	60%
Long Bun Storage Room Stack	=	35%
3 Exhaust Fans	=	5%

It is assumed that the 3 exhaust fans' emissions are equally distributed among all 3 exhaust fans.

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production methylene chloride usage = 14,000 lb/day

8-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 8 hr/day
= 1,750.0 lb/hr

Distributed 8-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	1,750.0 lb/hr x 60%	=	1,050.0 lb/hr
Long Bun Storage Room Stack	=	1,750.0 lb/hr x 35%	=	612.5 lb/hr
3 Exhaust Fans	=	1,750.0 lb/hr x 5%	=	87.5 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum methylene chloride content of glue = 70%

Maximum hourly gluing process methylene chloride emission rate = 3.1 lb/hr x 70% = 2.17 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.17 lb/hr

Distributed 8-hour average total methylene chloride emission rates:

Foam Line Stack	=	1,050.0 lb/hr		
Long Bun Storage Room Stack	=	612.5 lb/hr		
3 Exhaust Fans	=	87.5 lb/hr + 2.17 lb/hr	=	89.67 lb/hr
Each Exhaust Fan	=	89.67 lb/hr ÷ 3	=	29.89 lb/hr

24-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 24 hr/day
= 583.333 lb/hr

Distributed 24-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	583.333 lb/hr x 60%	=	350.0 lb/hr
Long Bun Storage Room Stack	=	583.333 lb/hr x 35%	=	204.167 lb/hr
3 Exhaust Fans	=	583.333 lb/hr x 5%	=	29.167 lb/hr

24-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.17 lb/hr

Distributed 24-hour average total methylene chloride emission rates:

Foam Line Stack	=	350.0 lb/hr		
Long Bun Storage Room Stack	=	204.167 lb/hr		
3 Exhaust Fans	=	29.167 lb/hr + 2.17 lb/hr	=	31.337 lb/hr
Each Exhaust Fan	=	31.337 lb/hr ÷ 3	=	10.4457 lb/hr

Maximum annual slabstock foam production methylene chloride usage = 551,192 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 551,192 lb/yr ÷ 8,760 hr/yr
= 62.921 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	62.921 lb/hr x 60%	=	37.7526 lb/hr
Long Bun Storage Room Stack	=	62.921 lb/hr x 35%	=	22.02235 lb/hr
3 Exhaust Fans	=	62.921 lb/hr x 5%	=	3.14605 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	37.7526 lb/hr		
Long Bun Storage Room Stack	=	22.02235 lb/hr		
3 Exhaust Fans	=	3.14605 lb/hr + 0.3676 lb/hr	=	3.51365 lb/hr
Each Exhaust Fan	=	3.51365 lb/hr ÷ 3	=	1.171217 lb/hr

Maximum slabstock foam production TDI emission rate = 0.37 lb/hr

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production TDI emissions = 0.37 lb/hr x 6.0 hr/day = 2.22 lb/day

TDI emission factor = 0.000028 lb emitted/lb used

Maximum hourly rebond process TDI usage rate = 164 lb/hr

Maximum hourly rebond process TDI emission rate = 164 lb/hr x 0.000028 lb/lb = 0.0046 lb/hr

Maximum daily rebond process hours of operation = 24.0 hr/day

8-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 8 hr/day	=	0.2775 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 8 hr/day ÷ 8 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0046 lb/hr ÷ 2	=	0.0023 lb/hr

24-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 24 hr/day	=	0.0925 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 24 hr/day ÷ 24 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0023 lb/hr ÷ 2	=	0.0023 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum 1,1,1-trichloroethane content of glue = 81%

Maximum hourly 1,1,1-trichloroethane emission rate = 3.1 lb/hr x 81% = 2.5 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	=	2.5 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.5 lb/hr
Each Exhaust Fan	=	2.5 lb/hr ÷ 3	=	0.83333 lb/hr

24-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	= 2.5 lb/hr x 24 hr/day ÷ 24 hr/day	= 2.5 lb/hr
Each Exhaust Fan	= 2.5 lb/hr ÷ 3	= 0.83333 lb/hr

Table 7. Emission Rates
Foamex, L.P. - Orlando, Florida

		Emission Rates for Compounds Modeled						
		Methylene Chloride			Toluene Diisocyanate		1,1,1-Trichloroethane	
Source Number	Source Description	8-hour (lb/hr)	24-hour (lb/hr)	Annual (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)
1	Foam Line Stack	1,050.0	350.0	37.7526	0.2775	0.0925	0.0	0.0
2	Long Bun Storage Room Stack	612.5	204.167	22.02235	0.0	0.0	0.0	0.0
3	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
8	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
13	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
20	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0
21	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP AAAC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP AAAC's. The resulting maximum annual ground level concentration for methylene chloride is 2.09998 $\mu g/m^3$, which is below the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's AAAC's.

Table 8. ISCST2 Modeling Results and Comparison with FDEP AAAC's Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,538.9	1,740
	24-hour	250.8	417.6
	Annual	2.09998	2.1
Toluene Diisocyanate	8-hour	0.29	0.36
	24-hour	0.04	0.0864
1,1,1-Trichloroethane	8-hour	10.1	38,200
	24-hour	6.7	9,168

March 15, 1996

VIA FACSIMILE
(904) 922-6979

26005.F21.816

Mr. C.H. Fancy, P.E.
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

This letter is to provide clarification regarding the requested modification of Construction Permit AC48-214902 for the Foamex L.P. flexible polyurethane foam manufacturing facility located in Orlando, Florida.

In our letter dated March 1, 1996, we explained that the permit amendment is requested to obtain approval to increase the annual methylene chloride usage at the Orlando facility. As we discussed during our meeting on February 22, 1996, this increase is requested to allow the facility to prepare for installation and startup of a new process technology, that will greatly reduce the use of methylene chloride as a blowing agent at the facility, and may eventually eliminate the need for it entirely. The requested increase is intended only for a maximum of five years. After this time period is expired (and perhaps before), the facility's methylene chloride usage will be greatly reduced.

Should you have any questions or comments concerning this matter, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

Joseph L. Tessitore

Joseph L. Tessitore, P.E.
Managing Principal

pkr\26005964.doc

cc: Mr. Doug Terrill, Foamex International
Mr. Tom Burghardt, Foamex International

Memorandum

Florida Department of
Environmental Protection

To: Clair Fancy

Thru: Al Linero

From: Willard Hanks wmh

Date: April 30, 1996

Subject: Modification of Permit
Foamex L.P.

Attached for your approval and signature is a proposed modification to the construction permit for Foamex's flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida.

The modification will allow the permittee to increase methylene chloride usage and emissions by approximately 12 percent from 261.03 to 280.13 TPY. This will result in a 19.1 TPY increase in methylene chloride emissions. The foam fabrication operation will be conducted in a smaller area which will allow 14 of the 17 exhaust fans to be shut down. The permit was extended for 1 year to allow time to obtain a permit to operate.

Modeling results of the reconfigured plant and higher emission rates shows the Ambient Reference Concentration for methyllene chloride is not exceeded.

I recommend your approval and signature.

CF/wh/h

Attachments

Z 127 633 205

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Douglas Terrill	
Street and No. FOAMEX LP	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 5-3-96 AC48-214902A	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrill
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
Z 127 633 205

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of ~~Delivery~~ 5-7-96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent) M Barber

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

FACSIMILE TRANSMISSION

To: Willard Hanks, FDEP

Fax Number: 904-922-6979

From: John Wolber

Date: May 6, 1996

Subject: Foamex Draft Permit Amendment

Project Number: 26005.F21.816

Number of pages (including this cover sheet): 4

Remarks:

Willard:

We have reviewed the draft permit amendment for Foamex and found a minor omission in Specific Condition No. 4. The requested increase in methylene chloride usage causes a small increase in the estimated houlry emissions from the Foam Fabrication Operations from 5.1 lb/hr to 5.32 lb/hr. This also increases the facility emissions from 2,222.43 lb/hr to 2,222.65 lb/hr. The draft permit amendment included the change in the hourly emissions from the foam fabrication operations but did not inlcude the change in facility hourly emissions. Since, this change does not affect the Public Notice of Intent to Issue Permit and we will go ahead and publish the notice. Please make the corrections to the final permit amendment, as is noted on the attached pages of the draft permit amendment.

Please call me or Kay Rykowski if you have questions.

Thanks,

JOHN

cc: Tom Burghardt, Foamex; Jack Wanat, Foamex; Kay Rykowski, HLA

Transmitted by: JMW

If you do not receive all pages, please call (407) 851-1484

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway
Orlando, Florida 32812 - (407) 851-1484

FAX (407) 855-0369

C:\PROJECT\26005\26005W13.DOC

DRAFT

Mr. Douglas L. Terrill
Page Three
Foamex, L.P.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITION NO. 4

From:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	2,222.43	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	89.79
IV.	Foam Fabrication Operations/ methylene chloride	5.1	14.41
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02

DRAFT

Mr. Douglas L. Terrill
Page Four
Foamex, L.P.

VI.	Tank Storage (Tank No. 10) methylene chloride	0 .66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	TPY
methylene chloride	BOLD? 2,222.~~43~~ 65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32 BOLD?	15.39
	1,1,1-trichloroethane	2.5	1.86

Mr. Douglas l. Terrill
Page Five
Foamex, L.P.

V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10) methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (Less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

Specific Condition No. 8

From:

An application for an operation permit shall be submitted to the Department's Central District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit. (Rules 62-4.055 and 62-4.220, F.A.C.)

To:

The permittee shall comply with the application requirements in Rule 62-213.420, F.A.C., for Title V operation permits.

A copy of this letter shall be attached to permit No. AC 48-214902 and shall become a part of that permit.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes, Director
Division of Air Resources
Management

0950225-002-AC **TRANSMITTAL**

To: Mr. Willard Hanks
Mr. C.H. Fancy, Jr.
FDEP - Tallahassee

From: Joe Tessitore
Kay Rykowski
HLA Orlando

Date: March 5, 1996

Subject: Foamex, Orlando Facility

Project Number: 26005.F21.816

RECEIVED
MAR 06 1996
BUREAU OF
AIR REGULATION

Please find enclosed:

- A letter request for amendment to Permit AC48-214902 for the Foamex foam manufacturing facility in Orlando;
- Attachment A - Revised Pages to Volume I of the Original Permit Application (1 copy);
- Attachment B - Revised Pages to Volume II: Dispersion Modeling Analysis, of the Original Permit Application (1 copy)
- Attachment C - Output Listings from Revised Modeling (Appendixes D,E,F,I and J of Volume II of Original Permit Application) (1 copy)
- Check No. 487130 in the amount of $1000.00 for applicaton processing fee.

As we discussed during our meeting on February 22, this amendment is requested to allow an increase in production at the facility, in preparation for installation of a new manufacturing technology. The proposed increase in methylene chloride usage results in an increase in the maximum annual groundlevel concentration of approximately 10%, however this maximum concentration does not exceed the FDEP Acceptable Ambient Concentration.

If you have any questions regarding this submittal, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

pkr\trans001.doc

Attachments

cc: Doug Terrill, Foamex; Orlando, Florida
Tom Burghardt, Foamex; Linwood, Pennsylvania

cc: W. Hanks
CD
Orange Co

Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

Harding Lawson Associates

March 4, 1996

26005.F21.816

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
MAR 06 1996
BUREAU OF
AIR REGULATION

Request for Permit Amendment
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

INTRODUCTION

This letter is to request an amendment to Construction Permit AC48-214902, issued to Foamex, L.P. This letter presents a summary of the requested changes to Specific Conditions 1, 2, and 4 issued by FDEP. As discussed with you during our meeting on February 22, the requested changes include an increase in the annual methylene chloride usage and a modification to the enhanced exhaust system for the foam fabrication operations. This amendment is requested to allow Foamex to increase production at their Orlando facility in the short term, in preparation for future installation of an alternate manufacturing technology that will greatly reduce methylene chloride emissions.

As discussed in the following comments and supported by the attachments, the predicted maximum ground level concentration for methylene chloride and 1,1,1-trichloroethane do not exceed the FDEP Acceptable Ambient Air Concentrations (AAAC) as a result of the requested changes to Specific Conditions 1, 2, and 4.

COMMENT 1

Foamex requests a change to reduce the number of exhaust fans for the foam fabrication operations from seventeen exhaust fans to three exhaust fans. As discussed in Foamex's First and Second Progress Reports (June 30, 1995 and January 31, 1996, respectively), this change is requested to minimize energy consumption and capital and operating costs. The foam fabrication operations will be isolated to smaller areas, thereby reducing the number of exhaust fans required to exhaust the foam fabrication emissions to only three fans rather than seventeen as outlined in the original permit application. The fourteen existing roof exhaust fans which will not be used for the foam fabrication exhaust system will be blocked off. The three fans to be used for the foam fabrication operations exhaust system are source numbers 7, 12, and 19 as identified in the original permit application and in the attached supporting documentation.

The new exhaust fan configuration has the minimal effect on the dispersion modeling analysis of slightly concentrating the foam fabrication operations emissions to the area of the three exhaust fans

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

as opposed to these emission being spread out over the area of the seventeen fans as originally proposed. The dispersion modeling has been revised to account for the new exhaust fan configuration. This change only impacts the modeling results for methylene chloride and 1,1,1-trichloroethane, the only pollutants emitted from the foam fabrication exhaust fans. The results of the revised modeling analysis, presented below, show that the 8-hour and 24-hour maximum ground level concentrations for methylene chloride and 1,1,1-trichloroethane are below the applicable FDEP AAAC's. The annual methylene chloride ground level concentration will be discussed in Comment 2.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour 24-hour	1,538.9 250.8	1,740 417.6
1,1,1-Trichloroethane	8-hour 24-hour	10.1 6.7	38,200 9,168

The revised pages, based on the requested changes, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 1 is given below.

From:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

To:

1. The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; three roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities

meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

COMMENT 2

Foamex requests a change in the limits on the annual quantity of methylene chloride used at the facility stated in Specific Condition 2. An increase in the annual usage rate of methylene chloride from 513,090 lbs/yr (256.6 TPY) to 551,192 lbs/yr (275.6 TPY) is requested to maximize foam production without exceeding the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. The dispersion modeling analysis has been revised based on the requested increase in the annual methylene chloride usage limit and the requested change in the foam fabrication operations exhaust system as discussed in Comment 1. The requested annual increase only affects the annual average emission rates and does not affect the maximum hourly or daily emissions of methylene chloride. The results of the revised modeling analysis, presented below, show that the maximum annual ground level concentration for methylene chloride does not exceed the FDEP annual AAAC for methylene chloride.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	Annual	2.09998	2.1

The revised pages, based on the requested change, of Volume I and Volume II: Dispersion Modeling Analysis of the permit application along with the output listings from the revised modeling analysis are attached.

The requested change in Specific Condition 2 is given below.

From:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

To:

2. The chemicals used at the facility shall not exceed the following quantities during any twelve month period: 551,192 lbs/yr (275.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and, 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

   Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

COMMENT 3

As a result of the requested increase in annual methylene chloride usage discussed in Comment 2 above, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The calculations supporting this change are provided in the attached revised pages of Volume I of the permit application. The requested change in Specific Condition 4 is given below.

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

   AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

	Emissions	
Chemicals	lbs/hr	TPY
methylene chloride	2,222.43	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	89.79
IV.	Foam Fabrication Operations/ methylene chloride	5.1	14.41
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emission factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	Emissions lbs/hr	Emissions TPY
methylene chloride	2,222.65	280.13
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.424

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

	Operation/chemical	Emissions lbs/hr	Emissions TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.404
II.	Foam Line Stack/ methylene chloride	1,400	165.36
III.	Long Bun Storage Room Stack/ methylene chloride	816.67	96.46
IV.	Foam Fabrication Operations/ methylene chloride	5.32	15.39
	1,1,1-trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.02
VI.	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

March 4, 1996
26005.F21.816
Mr. C. H. Fancy, P.E.
FDEP Bureau of Air Regulation
Page 7

CLOSING

Should you require any additional information or have any questions regarding these issues please contact Kay Rykowski at (407)851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

John Wolber
Project Scientist

Joseph L. Tessitore, P.E.
Managing Principal
State of Florida P.E. Registration Number 23374

JMW/JLT/jmw
26005W02.DOC/

Attachments:
- A. Revised pages to Volume I of Original Permit Application
- B. Revised pages to Volume II: Dispersion Modeling Analysis of Original Permit Application
- C. Output Listings from Revised Modeling (Appendixes D, E, F, I, and J of Volume II of Original Permit Application)

cc: Mr. Doug Terrill, Foamex, L.P., Orlando, Florida
Mr. Tom Burghardt, Foamex, L.P., Linville, Pennsylvania

Attachment A

Revised Pages to Volume I of Original Permit Application

a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three 50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication and processing operations throughout the rest of the facility before shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is

compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam. The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 3.3 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed.

2.2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the operation of the steam boiler are proposed.

2.2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 3.4 provides a listing of the individual heaters and the rated capacity of each heater.

2.2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions from the gluing process are vented to the atmosphere through the three ceiling exhaust fans located in the areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.2.1.

2.3 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

Table 2.1. Summary of Emission Sources
Foamex, L.P. - Orlando, Florida

Process Emission Source	Emission Point Number	Description
Slabstock Polyurethane Foam Production	1	Foam Line Stack
Slabstock Polyurethane Foam Production	2	Long Bun Storage Room Stack
Not operational as part of enhanced exhaust system	3	Exhaust Fan
Not operational as part of enhanced exhaust system	4	Exhaust Fan
Not operational as part of enhanced exhaust system	5	Exhaust Fan
Not operational as part of enhanced exhaust system	6	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	7	Exhaust Fan
Not operational as part of enhanced exhaust system	8	Exhaust Fan
Not operational as part of enhanced exhaust system	9	Exhaust Fan
Not operational as part of enhanced exhaust system	10	Exhaust Fan
Not operational as part of enhanced exhaust system	11	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	12	Exhaust Fan
Not operational as part of enhanced exhaust system	13	Exhaust Fan
Not operational as part of enhanced exhaust system	14	Exhaust Fan
Not operational as part of enhanced exhaust system	15	Exhaust Fan
Not operational as part of enhanced exhaust system	16	Exhaust Fan
Not operational as part of enhanced exhaust system	17	Exhaust Fan
Not operational as part of enhanced exhaust system	18	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	19	Exhaust Fan
Rebond Polyurethane Foam Production	20	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	21	Rebond Exhaust Fan
Tank Storage	22	Tank #10
Steam Boiler	23	Boiler Stack
Environmental Heating	24	Natural Gas Heaters

To calculate the maximum hourly usage rate of methylene chloride it is necessary to define the "worst case" maximum daily usage of methylene chloride. The "worst case" maximum daily methylene chloride usage is 14,000 lb/day.

The maximum hourly usage rate of methylene chloride is then calculated as follows:

Maximum hourly usage = 14,000 lb/day ÷ 6 hr/day = 2,333.33 lb/hr

The maximum annual usage of methylene chloride at the facility will be limited to 551,192 lbs/yr.

3.1.2 Rebond Polyurethane Foam Production

A summary of the typical material input and production rates for the Rebond process are provided in Table 3.2.

Table 3.2. Rebond Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Raw Materials:		
Scrap Foam	5,608	0
Polyol	459	0
TDI	164	0
Product:		
Rebond Foam Product	0	6,231

3.1.3 Tank Storage

As stated previously in Section 2.2.3 of this application, the Foamex facility includes eleven above ground storage tanks. The current estimated maximum annual material throughput for each tank is shown in Table 3.3 below.

Table 3.3. Tanks Storage Process Rates
Foamex, L.P. - Orlando, Florida

Tank Number	Product	Height (feet)	Diameter (feet)	Throughput (lbs/yr)
1	Polyol	35	12	Note 1
2	Polyol	35	12	Note 1
3	TDI	35	12	Note 2
4	Polyol	35	12	Note 1
5	Polyol	35	12	Note 1
6	TDI	35	12	Note 2
7	Empty	16	10.5	0
8	Polymer	16	10.5	1,000,000
9	Empty	35	12	0
10	Methylene Chloride	37 (long)	7	551,192
11	Empty	30 (long)	7	0

Note 1: Total Polyol Throughput = 15,000,000 lbs/yr
Note 2: Total TDI Throughput = 10,000,000 lbs/yr

3.1.4 Steam Boiler

The industrial boiler used for steam production is rated at 100 hp and is fired by natural gas. The boiler is used to convert an average of 1,570 gallons of water to steam each day for the Rebond process. The maximum heat input for the boiler is 4.2 mmBtu/hr with a maximum natural gas consumption rate of 4,200 cf/hr. The maximum operating schedule for the boiler is 8760 hrs/yr.

3.1.5 Environmental Heating

There are thirteen indirect natural gas fired heaters at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The total maximum heat input for the heaters is 1.85 mmBtu/hr, with a maximum natural gas usage rate of 1850 cf/hr. On an average basis, the natural gas usage rate is 200 cf/hr. Table 3.4 provides a listing of the individual heaters and heat input rates.

Table 3.4. Indirect Fired Heaters Process Rates
Foamex, L.P. - Orlando, Florida

Heater Number	Manufacturer	Model Number	Operational?	Maximum Heat Input (Btu/hr)
1	Bryant	200-341	Yes	200,000
2	Bryant	200-341	No	200,000
3	Hastings	GF200XE	Yes	200,000
4	Hastings	GF200XE	No	200,000
5	Hastings	GF200XE	Yes	200,000
6	Hastings	GF200XE	Yes	200,000
7	Hastings	GF200XE	Yes	200,000
8	Hastings	GF200XE	Yes	200,000
9	Hastings	GF200XE	Yes	200,000
10	Hastings	GF200XE	Yes	200,000
11	Bryant	200-341	No	200,000
12	Bryant	200-341	No	200,000
13	Peereless	1067	Yes	250,000
TOTAL (operational heaters only)				1,850,000

3.1.6 Foam Fabrication Operations

During Foam Fabrication Operations, the foam buns manufactured during the Slabstock process are cut and glued according to customer specifications. Approximately 3.1 lbs/hr of glue is used during these operations. The maximum annual usage rate of glue at the facility is 4,600 lb/yr, or 2.3 tons/yr.

3.2 Emissions Calculations

3.2.1 Slabstock Polyurethane Foam Production

3.2.1.1 Methylene Chloride

As stated in Section 3.1.1 of this application, methylene chloride represents the only significant emissions associated with this process. Currently, it is the only blowing agent used. In this process, all of the blowing agent used is emitted to the atmosphere and does not end up in the foam product. Based on industry and product information, it is assumed for this permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. The total uncontrolled process emissions of methylene chloride on an annual basis can, therefore, be estimated directly from the annual methylene chloride usage rate in Section 3.1.1.

Maximum annual methylene chloride usage = 551,192 lbs/yr

Maximum annual methylene chloride emissions = 551,192 lbs/yr ÷ 2,000 lbs/ton
= 275.6 tons/yr

The values shown above represent the total methylene chloride emissions from the slabstock foam production process. However, these emissions are distributed between each of the two stacks serving the process, the Foam Line Stack and the Long Bun Storage Room Stack, and the three exhaust ceiling exhaust fans serving the Foam Fabrication Operations area. Both short term and long term emission rates must be calculated for the Foam Line Stack and Long Bun Storage Room Stack. Emissions calculations for the Foam Fabrication Operations are included under that heading in Section 3.2.6. Long term or annual emissions from the Foam Line and Long Bun Storage Room can be calculated by multiplying the distribution factors for each (60% and 35%, respectively) by the total maximum annual emissions specified above.

Foam Line Stack:

Maximum annual methylene chloride emissions	= 551,192 lbs/yr x 0.60
	= 330,715.2 lb/yr
Maximum annual methylene chloride emissions	= 330,715.2 lbs/yr ÷ 2,000 lbs/ton
	= 165.36 tons/yr

Long Bun Storage Room Stack:

Maximum annual methylene chloride emissions	= 551,192 lbs/yr x 0.35
	= 192,916.85 lb/yr
Maximum annual methylene chloride emissions	= 192,916.85 lbs/yr ÷ 2,000 lbs/ton
	= 96.46 tons/yr

The first step in developing an estimate of the maximum hourly emission rate for the Foam Line and Long Bun Storage Room is to define the "worst case" maximum daily methylene chloride usage. For this purpose, the "worst case" daily usage of methylene chloride, as defined in Section 3.1.1 of this application, is 14,000 lbs/day over six hours of operation (2,333.33 lb/hr). Assuming that 60% of this quantity is released during the pour period in the foam line enclosure as the foam travels along the process line conveyor before it reaches the Long Bun Storage Room, the Foam Line Stack emits a total of 8,400 pounds of methylene chloride over the six hour pour period. As the buns enter the Long Bun Storage Room, the remaining methylene chloride which is contained in the foam material begins to be released. Assuming that 35% of the methylene chloride used during the pour is released in the Long Bun Storage Room during the cure period, a total of 4,900 pounds of methylene chloride is emitted from the Long Bun Storage Room Stack. The 5% (700 pounds) of the methylene chloride remaining after the cure period in the foam product after it is removed from the Long Bun Storage Room is emitted during the foam fabrication operations through the three ceiling exhaust fans located in the foam fabrication areas.

As stated previously, the Long Bun Storage Room emissions decay at an exponential rate over the foam cure period. Appendix A provides a detailed analysis of the actual emission rate profile for the Long Bun Storage Room. However, for emission calculation purposes, a more simple approach representing a worst case scenario is used. This approach ignores the decay profile and the foam cure period and instead assumes that the total quantity of emissions is released at a steady rate during the pour period only. Because the length of the pour period is shorter than the cure period, the resulting maximum short term emission rate is higher. Thus, this approach represents a worst case scenario. The following provides a simple summary of this mass balance.

Maximum methylene chloride usage	= 14,000 lbs
Maximum Foam Line Stack methylene chloride emissions	= 8,400 lbs
Maximum Long Bun Storage Room Stack methylene chloride emissions	= 4,900 lbs
Maximum methylene chloride emissions from three exhaust fans	= 700 lbs
Maximum Total methylene chloride emissions	= 14,000 lbs

Using the worst case assumption that the total emissions for both the Foam Line Stack and Long Bun Storage Room Stack occur during the six hour pour period, the maximum hourly emission rates are calculated as follows:

Foam Line Stack:

Maximum hourly methylene chloride emissions = 8,400 lbs ÷ 6 hrs
= 1,400 lb/hr

Long Bun Storage Room Stack:

Maximum hourly methylene chloride emissions = 4,900 lbs ÷ 6 hrs
= 816.67 lb/hr

As stated above, emissions from the three exhaust fans during foam fabrication operations are included under the heading Foam Fabrication Operations in Section 3.2.6.

3.2.1.2 Toluene Diisocyanate

As stated above, the Slabstock process involves the mixture of various process chemicals along with an auxiliary blowing agent to produce polyurethane foam. The calculations presented above provide an estimate of the emissions of the auxiliary blowing agent, methylene chloride. All of the methylene chloride used is volatilized and thus emitted from the process. The remaining process chemicals listed in the mass balance, shown in Section 3.1.1, combine to form the foam product. In 1991, Foamex conducted a stack test for emissions of methylene chloride and toluene diisocyanate (TDI). The test results, included in Appendix B, revealed that a small quantity of TDI is emitted from the process. Table 3.5 provides a summary of the test results.

version 1.0, which is based on the calculation procedures specified in AP-42 section 12. The calculations were conducted based on the maximum annual methylene chloride throughput for the facility of 551,192 lb/yr. The calculations represented in Appendix C were conducted based on the existing tank design, which includes a breather vent with no pressure setting. Thus breathing losses, also referred to as standing losses, are not limited in any way. The following provides a summary of the results of the calculations. However Foamex proposes to install a pressure relief vent for this tank such that standing losses would be minimized.

Total standing losses	=	4992.73 lbs/yr
Total working losses	=	844.16 lbs/yr
Maximum annual emissions	=	(4992.73 lbs/yr) + (844.16 lbs/yr)
	=	5836.89 lbs/yr
	=	(5836.89 lbs/yr) ÷ (2000 lbs/ton)
	=	2.9 tons/yr
Annual average emission rate	=	(5836.89 lbs/yr) ÷ (8760 hrs/yr)
	=	0.66 lbs/hr

3.2.4 Steam Boiler

Emissions from the Steam Boiler are generated through natural gas combustion. Appendix D provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.6 provides a summary of the results of these calculations.

Table 3.6. Steam Boiler Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.021	0.092
Sulfur dioxide	0.0025	0.011
Nitrogen oxide	0.59	2.58
Carbon monoxide	0.147	0.64
Total hydrocarbons	0.013	0.055

3.2.5 Environmental Heating

Emissions from Environmental Heating are generated through natural gas combustion. Appendix E provides calculations of the fuel combustion emissions based on the procedures specified in AP-42 section 1.4. A copy of this AP-42 section is also included in Appendix D. Table 3.7 provides a summary of the results of these calculations.

Table 3.7. Environmental Heating Emission Rates
Foamex, L.P. - Orlando, Florida

Compound	Maximum Hourly Emission Rate (lbs/hr)	Maximum Annual Emissions (tons/yr)
Particulate	0.00925	0.00185
Sulfur dioxide	0.00111	0.000222
Nitrogen oxide	0.259	0.0518
Carbon monoxide	0.06475	0.01295
Total hydrocarbons	0.00555	0.00111

3.2.6 Foam Fabrication Operations

3.2.6.1 Methylene Chloride

As stated above, after the foam bun cure period ends 5% of the total methylene chloride used is still retained in the foam buns. This quantity is not released until the buns leave the Long Bun Storage Room and are cut or processed during Foam Fabrication operations. This remaining 5% is emitted from the foam into the areas isolated for foam fabrication operations and discharged to the atmosphere through the three ceiling exhaust fans located in these areas. Further, since an inventory of foam product is always present in the foam fabrication areas, these emissions are released at a constant rate throughout the year. The maximum annual emissions and maximum hourly emission rates for these emissions from the three foam fabrication operations exhaust fans are calculated as follows.

Maximum annual emissions	=	551,192 lbs/yr x 0.05
	=	27,559.6 lbs/yr
	=	13.78 tons/yr
Maximum hourly emissions	=	27,559.6 lbs/yr ÷ 8,760 hr/yr
	=	3.15 lb/hr

In the gluing process Foamex uses a methylene chloride based glue, therefore, methylene chloride emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum methylene chloride content of the glue is 70% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the methylene chloride emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.70
	=	2.17 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.70 ÷ 2,000 lbs/ton
	=	1.61 tons/yr

The total methylene chloride emissions from the foam fabrication operations are calculated as follows:

Maximum hourly emissions	=	3.15 lb/hr + 2.17 lbs/hr

	=	5.32 lbs/hr
Maximum annual emissions	=	13.78 tons/yr + 1.61 tons/yr
	=	15.39 tons/yr

3.2.6.2 1,1,1-Trichloroethane

In the gluing process Foamex may also use a 1,1,1-trichloroethane based glue, therefore, 1,1,1-trichloroethane emissions must be calculated for the gluing process. In section 3.1.6, the annual and hourly usage rates of glue used in these operations are presented. Based on the Material Safety Data Sheet (MSDS) for this glue, the maximum 1,1,1-trichloroethane content of the glue is 81% by weight. Copies of relevant MSDS are provided in Appendix F. Using the glue usage rates of 3.1 lbs/hr and 4,600 lb/yr the 1,1,1-trichloroethane emissions are calculated as follows:

Maximum hourly emissions	=	3.1 lbs/hr x 0.81
	=	2.5 lbs/hr
Maximum annual emissions	=	4,600 lbs/yr x 0.81 ÷ 2,000 lbs/ton
	=	1.86 tons/yr

3.2.7 Emissions Summary

A summary of the maximum hourly and annual emission rates for each process is provided in Table 3.8. Emission rates calculated on an 8-hour average and 24-hour average are also provided in Volume II of this application, the Dispersion Modeling Analysis, which is submitted under separate cover.

Table 3.8. Emissions Summary
Foamex, L.P. - Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/hr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	2216.67	261.82	N/A	N/A	2216.67	261.82
	Tank Storage	0.66	2.92	N/A	N/A	0.66	2.92
	Foam Fabrication	5.32	15.39	N/A	N/A	5.32	15.39
	Subtotal	2222.65	280.13	N/A	N/A	2222.65	280.13
1,1,1-Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.404	N/A	N/A	0.37	0.404
	Rebond Process	0.0046	0.02	N/A	N/A	0.0046	0.02
	Subtotal	0.3746	0.424	N/A	N/A	0.3746	0.424
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2).
2. Reference applicable emission standards and units (e.g. Rule 17-2.6000(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input).
3. Calculated from operating data and applicable standard.
4. Emission, if source operated without control (See Section V, Item 3).

3.3 Emission Stack Data

Table 3.9 provides a summary of the geometry and flow characteristics for each stack located at the Foamex, L.P. facility.

Table 3.9. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Water Vapor Content
1	Foam Line Stack	125	33.75	30,000	80	80.481	Ambient
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	Ambient
3	Exhaust Fan		Not operational as part of enhanced exhaust system				
4	Exhaust Fan		Not operational as part of enhanced exhaust system				
5	Exhaust Fan		Not operational as part of enhanced exhaust system				
6	Exhaust Fan		Not operational as part of enhanced exhaust system				
7	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
8	Exhaust Fan		Not operational as part of enhanced exhaust system				
9	Exhaust Fan		Not operational as part of enhanced exhaust system				
10	Exhaust Fan		Not operational as part of enhanced exhaust system				
11	Exhaust Fan		Not operational as part of enhanced exhaust system				
12	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
13	Exhaust Fan		Not operational as part of enhanced exhaust system				
14	Exhaust Fan		Not operational as part of enhanced exhaust system				
15	Exhaust Fan		Not operational as part of enhanced exhaust system				
16	Exhaust Fan		Not operational as part of enhanced exhaust system				
17	Exhaust Fan		Not operational as part of enhanced exhaust system				
18	Exhaust Fan		Not operational as part of enhanced exhaust system				
19	Exhaust Fan	53	43.5	50,000	80	80.744	Ambient
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	Ambient

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

Attachment B

Revised Pages to Volume II: Dispersion Modeling Analysis of Original Permit Application

2.0 PROJECT DESCRIPTION

Two basic processes are used at the Foamex facility to manufacture polyurethane foam product: Slabstock Polyurethane Foam Production and Rebond Polyurethane Foam Production. These processes are used to manufacture foam products of various density, color and thickness. While the basic processes remain the same, the proportions of raw materials are modified slightly for each batch to achieve the desired product specifications. In addition to the two manufacturing processes, support operations at the facility include tank storage of process chemicals, steam boiler operation, environmental heating, and foam fabrication operations.

2.1 Slabstock Polyurethane Foam Production

In the Slabstock process, a high pressure mixing head and metering pumps are used to mix the specific raw materials required for each product. These raw materials include toluene diisocyanate (TDI), polyol, water, catalysts, surfactants, additives (such as pigments or flame retardants), and methylene chloride, an auxiliary blowing agent. The mixed raw materials are discharged into a trough where the mixture begins to react and flows down a tunnel area. Heat generated by the exothermic reaction volatilizes the methylene chloride thus allowing the foam to reach a predetermined density. The foam begins releasing methylene chloride at this point. The methylene chloride serves to reduce the foam density, or soften it, and to provide cooling of the mixture as it discharges energy during the exothermic reaction. The foam slab travels through the tunnel via a conveyor. After exiting the tunnel the foam slab is cut into sections, referred to as buns. The buns continue down the conveyor and enter the Long Bun Storage Room. The foam continues to release methylene chloride as it travels down the conveyor to the Long Bun Storage Room. The buns are then removed from the conveyor and placed in the room for temporary storage during completion of a twelve hour cure period, continuing to release methylene chloride at a diminishing rate.

Currently, the Slabstock process is equipped with an exhaust system and tunnel which covers part of the mixing head, trough and conveyor line to vent the emissions which occur during the initial stages of the process. This system maintains a negative pressure along the covered portion of the process and vents the methylene chloride emissions to the atmosphere through an existing stack. Emissions of methylene chloride which occur outside of the foam line tunnel, inside the Long Bun Storage Room and in isolated areas of the facility during foam fabrication operations, are currently released into the interior of the facility and discharged to the atmosphere through general ventilation fans (50,000 CFM each) located in the ceiling throughout the facility.

The proposed enhanced collection system requires the complete enclosure of the mixing head, trough, and conveyor line in a tunnel. The foam line enclosure will extend from the mixing head to the Long Bun Storage Room. The system will be designed to maintain negative pressure within the foam line enclosure. The foam line enclosure exhaust will be vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. In addition to the foam line enclosure, the proposed enhanced collection system requires the Long Bun Storage Room to be maintained under negative pressure and the exhaust vented to the atmosphere by a 30,000 CFM exhaust fan, or combination of fans totaling 30,000 CFM, via an exhaust stack with a height of 125 feet above ground level. As part the proposed system, the existing ceiling exhaust fans in the Long Bun Storage Room will not be operational. Emissions from foam fabrication operations, which do not occur within the foam line enclosure or Long Bun Storage Room, will be vented to the atmosphere through three

50,000 CFM general exhaust fans located in the ceiling in the areas of the facility isolated for foam fabrication operations. To provide enhanced dispersion, these three exhaust fans will be fitted with extensions to increase the their stack heights to 53 feet above ground level. As part of the proposed system the remaining fourteen ceiling exhaust fans not used as part of the foam fabrication operations exhaust system will not be operational.

Based on industry and product information, it is assumed for this analysis and the permit application, that 60% of the methylene chloride is released from the foam in the foam line enclosure before it reaches the Long Bun Storage Room and 35% is released during the twelve hour cure period in the Long Bun Storage Room. The remaining 5% of the methylene chloride is released during subsequent foam fabrication operations prior to shipment of the final product. Also, all TDI emissions associated with the Slabstock production occur within the foam line enclosure and are emitted to the atmosphere via the foam line stack.

2.2 Rebond Polyurethane Foam Production

In the Rebond process, scrap polyurethane foam, either purchased or recovered from the slabstock manufacturing process, is granulated into small pieces approximately 3/4 to one inch in size. This granulated foam is stored by grade, density, and/or by composition in large storage bins. The scrap pieces of polyurethane foam are mixed with an adhesive binder in a blend tank. The binder is a mixture of TDI and polyol. The mixture of scrap foam and binder is then transferred from the blend tank to the mold where it is compressed under an air cylinder to a designated size. The product is steamed from the bottom of the mold, which cures the foam . The resulting cylinder of foam is referred to as a log. The foam log is then peeled into a continuous sheet with a thickness of 1/4 to 3/4 inch, per customer specifications. The foam sheet product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 1 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Methylene chloride emissions from Tank 10 were calculated using EPA's Storage Tank Emissions Calculation program, TANKS version 1.0, and are presented in the permit application. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed. Based on previous submittals to FDEP, methylene chloride emissions from Tank 10 are not addressed in this dispersion modeling analysis.

2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the

operation of the steam boiler are proposed. Emissions from the steam boiler are not addressed in this dispersion modeling analysis.

2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 2 provides a listing of the individual heaters and the rated capacity of each heater. Emissions from the heaters are not addressed in this dispersion modeling analysis.

2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place only in those areas of the facility isolated for foam fabrication operations. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions of methylene chloride and 1,1,1-trichloroethane from the gluing process are analyzed in this dispersion modeling analysis. The emissions from the gluing process are vented to the atmosphere through the three ceileing exhaust fans located in areas isolated for foam fabrication operations, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.1.

2.7 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

3.0 DISPERSION MODELING METHODOLOGY

As previously stated, the dispersion modeling analysis presented in this report only addresses the following emissions from the Foamex facility:

- Methylene Chloride from the slabstock foam manufacturing process and from the gluing process during foam fabrication operations;
- Toluene Diisocyanate from the slabstock foam manufacturing process and rebond foam manufacturing process; and
- 1,1,1-Trichloroethane from the gluing process during foam fabrication operations.

The methodology followed in the dispersion modeling analysis is as follows:

1) A downwash/Good Engineering Practice (GEP) stack height analysis was conducted utilizing EPA's new Building Profile Input Program (BPIP), dated 94074.
2) Emission rates for each compound and process were calculated based on maximum daily and annual usage of each compound.
3) The EPA Industrial Source Complex - Short Term model (ISCST2), dated 93109, was used to predict the 8-hour and 24-hour impacts of each compound and annual impacts of methylene chloride from the facility.
4) The resulting concentrations were then compared with FDEP's AAAC's for each compound to determine if they are below the AAAC's.

4.0 SOURCE DATA

The source data used in the dispersion modeling analysis are presented in Table 3 below. The location of each source is shown in Figure 2.

Table 3. Stack and Exhaust Fan Stack Parameters
Foamex, L.P. - Orlando, Florida

Source Number	Description	Stack Height[a] Above Ground Level (feet)	Stack Inside Diameter (inches)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)	Stack Gas Exit Velocity (ft/sec)	Stack Location Coordinates[b] (feet) East	North
1	Foam Line Stack	125	33.75	30,000	80	80.481	577	393
2	Long Bun Storage Room Stack	125	33.75	30,000	80	80.481	500	56
3	Exhaust Fan	Not operational as part of enhanced exhaust system					356	319
4	Exhaust Fan	Not operational as part of enhanced exhaust system					356	363
5	Exhaust Fan	Not operational as part of enhanced exhaust system					356	393
6	Exhaust Fan	Not operational as part of enhanced exhaust system					356	445
7	Exhaust Fan	53	43.5	50,000	80	80.744	356	501
8	Exhaust Fan	Not operational as part of enhanced exhaust system					356	554
9	Exhaust Fan	Not operational as part of enhanced exhaust system					356	603
10	Exhaust Fan	Not operational as part of enhanced exhaust system					356	633
11	Exhaust Fan	Not operational as part of enhanced exhaust system					484	319
12	Exhaust Fan	53	43.5	50,000	80	80.744	484	363
13	Exhaust Fan	Not operational as part of enhanced exhaust system					484	393
14	Exhaust Fan	Not operational as part of enhanced exhaust system					484	445
15	Exhaust Fan	Not operational as part of enhanced exhaust system					484	501
16	Exhaust Fan	Not operational as part of enhanced exhaust system					484	554
17	Exhaust Fan	Not operational as part of enhanced exhaust system					484	603
18	Exhaust Fan	Not operational as part of enhanced exhaust system					484	633
19	Exhaust Fan	53	43.5	50,000	80	80.744	600	336.5
20	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	534
21	Rebond Exhaust Fan	53	24	15,000	80	79.577	464	546

a. Elevation of top of stack above ground level. Stack base elevation = 0 feet.

b. See Figure 2 for stack locations.

Table 5. GEP Stack Heights and Modeled Stack Heights
Foamex, L.P. - Orlando Facility

Source Number	Description	Stack Heights Above Ground Level GEP (feet)	Modeled (feet)
1	Foam Line Stack	125	125
2	Long Bun Storage Room Stack	125	125
3	Exhaust Fan	Not modeled[a]	
4	Exhaust Fan	Not modeled[a]	
5	Exhaust Fan	Not modeled[a]	
6	Exhaust Fan	Not modeled[a]	
7	Exhaust Fan	125	53
8	Exhaust Fan	Not modeled[a]	
9	Exhaust Fan	Not modeled[a]	
10	Exhaust Fan	Not modeled[a]	
11	Exhaust Fan	Not modeled[a]	
12	Exhaust Fan	125	53
13	Exhaust Fan	Not modeled[a]	
14	Exhaust Fan	Not modeled[a]	
15	Exhaust Fan	Not modeled[a]	
16	Exhaust Fan	Not modeled[a]	
17	Exhaust Fan	Not modeled[a]	
18	Exhaust Fan	Not modeled[a]	
19	Exhaust Fan	125	53
20	Rebond Exhaust Fan	100	53
21	Rebond Exhaust Fan	100	53

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

11.0 COMPOUNDS AND APPLICABLE STANDARDS

The impacts of the compounds listed in Table 6 below were examined in this dispersion modeling analysis. The resulting concentrations were then compared with the listed applicable FDEP AAAC's to determine if they are below the AAAC's.

Table 6. Compounds Analyzed and AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,740
	24-hour	417.6
	Annual	2.1
Toluene Diisocyanate	8-hour	0.36
	24-hour	0.0864
1,1,1-Trichloroethane	8-hour	38,200
	24-hour	9,168

12.0 CONCENTRATIONS CALCULATED

For comparison with the FDEP AAAC's the maximum concentrations were calculated for each compound by the ISCST2 model for the 8-hour and 24-hour averaging times. The annual average concentration was also calculated for methylene chloride by the ISCST2 model by using the PERIOD keyword in the averaging times parameter list.

13.0 EMISSION RATES

Maximum hourly and daily usage rates were used to calculate the 8-hour and 24-hour average emission rates for each compound listed in Table 6. The maximum annual usage of methylene chloride was used to calculate the annual average emission rates of methylene chloride from the facility. The calculation of the emission rates used in the analysis is shown below and summarized in Table 7.

Compounds modeled:

- Methylene Chloride
- Toluene Diisocyanate (TDI)
- 1,1,1-Trichloroethane

Slabstock Foam Production Methylene Chloride emission distribution:

Foam Line Stack	=	60%
Long Bun Storage Room Stack	=	35%
3 Exhaust Fans	=	5%

It is assumed that the 3 exhaust fans' emissions are equally distributed among all 3 exhaust fans.

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production methylene chloride usage = 14,000 lb/day

8-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 8 hr/day
= 1,750.0 lb/hr

Distributed 8-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	1,750.0 lb/hr x 60%	=	1,050.0 lb/hr
Long Bun Storage Room Stack	=	1,750.0 lb/hr x 35%	=	612.5 lb/hr
3 Exhaust Fans	=	1,750.0 lb/hr x 5%	=	87.5 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum methylene chloride content of glue = 70%

Maximum hourly gluing process methylene chloride emission rate = 3.1 lb/hr x 70% = 2.17 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.17 lb/hr

Distributed 8-hour average total methylene chloride emission rates:

Foam Line Stack	=	1,050.0 lb/hr		
Long Bun Storage Room Stack	=	612.5 lb/hr		
3 Exhaust Fans	=	87.5 lb/hr + 2.17 lb/hr	=	89.67 lb/hr
Each Exhaust Fan	=	89.67 lb/hr ÷ 3	=	29.89 lb/hr

24-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 24 hr/day
= 583.333 lb/hr

Distributed 24-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	583.333 lb/hr x 60%	=	350.0 lb/hr
Long Bun Storage Room Stack	=	583.333 lb/hr x 35%	=	204.167 lb/hr
3 Exhaust Fans	=	583.333 lb/hr x 5%	=	29.167 lb/hr

24-hour average gluing process methylene chloride emission rate:

3 Exhaust Fans	=	2.17 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.17 lb/hr

Distributed 24-hour average total methylene chloride emission rates:

Foam Line Stack	=	350.0 lb/hr		
Long Bun Storage Room Stack	=	204.167 lb/hr		
3 Exhaust Fans	=	29.167 lb/hr + 2.17 lb/hr	=	31.337 lb/hr
Each Exhaust Fan	=	31.337 lb/hr ÷ 3	=	10.4457 lb/hr

Maximum annual slabstock foam production methylene chloride usage = 551,192 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 551,192 lb/yr ÷ 8,760 hr/yr
= 62.921 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	62.921 lb/hr x 60%	=	37.7526 lb/hr
Long Bun Storage Room Stack	=	62.921 lb/hr x 35%	=	22.02235 lb/hr
3 Exhaust Fans	=	62.921 lb/hr x 5%	=	3.14605 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	37.7526 lb/hr		
Long Bun Storage Room Stack	=	22.02235 lb/hr		
3 Exhaust Fans	=	3.14605 lb/hr + 0.3676 lb/hr	=	3.51365 lb/hr
Each Exhaust Fan	=	3.51365 lb/hr ÷ 3	=	1.171217 lb/hr

Maximum slabstock foam production TDI emission rate = 0.37 lb/hr

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production TDI emissions = 0.37 lb/hr x 6.0 hr/day = 2.22 lb/day

TDI emission factor = 0.000028 lb emitted/lb used

Maximum hourly rebond process TDI usage rate = 164 lb/hr

Maximum hourly rebond process TDI emission rate = 164 lb/hr x 0.000028 lb/lb = 0.0046 lb/hr

Maximum daily rebond process hours of operation = 24.0 hr/day

8-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 8 hr/day	=	0.2775 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 8 hr/day ÷ 8 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0046 lb/hr ÷ 2	=	0.0023 lb/hr

24-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 24 hr/day	=	0.0925 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 24 hr/day ÷ 24 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0023 lb/hr ÷ 2	=	0.0023 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum 1,1,1-trichloroethane content of glue = 81%

Maximum hourly 1,1,1-trichloroethane emission rate = 3.1 lb/hr x 81% = 2.5 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	=	2.5 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.5 lb/hr
Each Exhaust Fan	=	2.5 lb/hr ÷ 3	=	0.83333 lb/hr

24-hour average 1,1,1-trichloroethane emission rates:

3 Exhaust Fans	= 2.5 lb/hr x 24 hr/day ÷ 24 hr/day	= 2.5 lb/hr
Each Exhaust Fan	= 2.5 lb/hr ÷ 3	= 0.83333 lb/hr

Table 7. Emission Rates
Foamex, L.P. - Orlando, Florida

		Emission Rates for Compounds Modeled						
		Methylene Chloride			Toluene Diisocyanate		1,1,1-Trichloroethane	
Source Number	Source Description	8-hour (lb/hr)	24-hour (lb/hr)	Annual (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)
1	Foam Line Stack	1,050.0	350.0	37.7526	0.2775	0.0925	0.0	0.0
2	Long Bun Storage Room Stack	612.5	204.167	22.02235	0.0	0.0	0.0	0.0
3	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
8	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
13	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Exhaust Fan[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Exhaust Fan	29.89	10.4457	1.171217	0.0	0.0	0.83333	0.83333
20	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0
21	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0

a. Exhaust fans 3 - 6, 8 - 11, and 13 - 17 are not operational as part of enhanced exhaust system and therefore were not modeled.

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP AAAC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP AAAC's. The resulting maximum annual ground level concentration for methylene chloride is 2.09998 $\mu g/m^3$, which is below the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's AAAC's.

Table 8. ISCST2 Modeling Results and Comparison with FDEP AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,538.9	1,740
	24-hour	250.8	417.6
	Annual	2.09998	2.1
Toluene Diisocyanate	8-hour	0.29	0.36
	24-hour	0.04	0.0864
1,1,1-Trichloroethane	8-hour	10.1	38,200
	24-hour	6.7	9,168

Foamex

Attachment C

Output Listings from Revised Modeling
(Appendixes D, E, F, I, and J of Volume II of Original Permit Application)

APPENDIX D

ISCST2 OUTPUT LISTING

METHYLENE CHLORIDE 8-HOUR AVERGAGE EMISSSION

RUN: FMXMC8

```
ISCST2 - (DATED 93109)

IBM-PC VERSION (2.11 ) ISCST2F
(C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  2/29/1996 at  8:31:38


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO Methlyene Chloride 8-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 8
CO POLLUTID MC_8
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79      0.00
SO SRCPARAM FOAMLINE 132.2976      38.10     299.82    24.5307      0.857
SO LOCATION LONGBUN POINT     152.40      17.07       0.00
SO SRCPARAM LONGBUN 77.17362      38.10     299.82    24.5307      0.857
SO LOCATION EXFAN_7 POINT     108.51     152.71       0.00
SO SRCPARAM EXFAN_7 3.766073      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64      0.00
SO SRCPARAM EXFAN_12 3.766073      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88     102.56      0.00
SO SRCPARAM EXFAN_19 3.766073      16.15     299.82    24.6109      1.105
SO BUILDHGT FOAMLINE    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    12.19
SO BUILDHGT FOAMLINE    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID FOAMLINE    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID FOAMLINE    39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID FOAMLINE    37.02    33.83    93.48    88.29    80.42    12.19
SO BUILDWID FOAMLINE    18.62    88.29    93.48    95.83    95.26    91.81
SO BUILDWID FOAMLINE    39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID FOAMLINE    37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID LONGBUN    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID LONGBUN    85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID LONGBUN    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID LONGBUN    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID LONGBUN    85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID LONGBUN    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
```

```
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID EXFAN_7   116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID EXFAN_7   146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID EXFAN_7   150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID EXFAN_7   116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID EXFAN_7   146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID EXFAN_7    95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID EXFAN_12    80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID EXFAN_12    39.97    39.64   103.63   114.23    39.97    91.81
SO BUILDWID EXFAN_12    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID EXFAN_12    80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID EXFAN_12    39.97    39.64    38.10    39.64    39.97    91.81
SO BUILDWID EXFAN_12    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDWID EXFAN_19    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID EXFAN_19    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
```

```
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 8 FIRST
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 8-HR

**This Run Includes: 5 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: MC_8

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMXMC8.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMXMC8.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.13230E+03	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.77174E+02	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_7	0	0.37661E+01	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.37661E+01	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.37661E+01	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC   RURAL   FLAT   DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***

X-ORIG =   106.68 ;   Y-ORIG =   110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***

(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***

(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(     0.0,      0.0,      0.0,      0.0);      (    15.2,      0.0,      0.0,      0.0);
(    30.5,      0.0,      0.0,      0.0);      (    45.7,      0.0,      0.0,      0.0);
(    61.0,      0.0,      0.0,      0.0);      (    76.2,      0.0,      0.0,      0.0);
(    91.4,      0.0,      0.0,      0.0);      (   106.7,      0.0,      0.0,      0.0);
(   121.9,      0.0,      0.0,      0.0);      (   137.2,      0.0,      0.0,      0.0);
(   152.4,      0.0,      0.0,      0.0);      (   167.6,      0.0,      0.0,      0.0);
(   182.9,      0.0,      0.0,      0.0);      (   198.1,      0.0,      0.0,      0.0);
(   213.4,      0.0,      0.0,      0.0);      (   213.4,     15.2,      0.0,      0.0);
(   213.4,     30.5,      0.0,      0.0);      (   213.4,     45.7,      0.0,      0.0);
(   213.4,     61.0,      0.0,      0.0);      (   213.4,     76.2,      0.0,      0.0);
(   213.4,     91.4,      0.0,      0.0);      (   213.4,    106.7,      0.0,      0.0);
(   213.4,    121.9,      0.0,      0.0);      (   213.4,    137.2,      0.0,      0.0);
(   213.4,    152.4,      0.0,      0.0);      (   213.4,    167.6,      0.0,      0.0);
(   213.4,    182.9,      0.0,      0.0);      (   213.4,    198.1,      0.0,      0.0);
(   213.4,    213.4,      0.0,      0.0);      (   213.4,    221.0,      0.0,      0.0);
(   198.1,    221.0,      0.0,      0.0);      (   182.9,    221.0,      0.0,      0.0);
(   167.6,    221.0,      0.0,      0.0);      (   152.4,    221.0,      0.0,      0.0);
(   137.2,    221.0,      0.0,      0.0);      (   121.9,    221.0,      0.0,      0.0);
(   106.7,    221.0,      0.0,      0.0);      (    91.4,    221.0,      0.0,      0.0);
(    76.2,    221.0,      0.0,      0.0);      (    61.0,    221.0,      0.0,      0.0);
(    45.7,    221.0,      0.0,      0.0);      (    30.5,    221.0,      0.0,      0.0);
(    15.2,    221.0,      0.0,      0.0);      (     0.0,    221.0,      0.0,      0.0);
(     0.0,    213.4,      0.0,      0.0);      (     0.0,    198.1,      0.0,      0.0);
(     0.0,    182.9,      0.0,      0.0);      (     0.0,    167.6,      0.0,      0.0);
(     0.0,    152.4,      0.0,      0.0);      (     0.0,    137.2,      0.0,      0.0);
(     0.0,    121.9,      0.0,      0.0);      (     0.0,    106.7,      0.0,      0.0);
(     0.0,     91.4,      0.0,      0.0);      (     0.0,     76.2,      0.0,      0.0);
(     0.0,     61.0,      0.0,      0.0);      (     0.0,     45.7,      0.0,      0.0);
(     0.0,     30.5,      0.0,      0.0);      (     0.0,     15.2,      0.0,      0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST2 - VERSION 93109 *** *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) *** 02/29/96
*** Methlyene Chloride 8-hr Average Emissions *** 08:31:39
PAGE 11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	541.41797 (86071316)	906.06580 (86071316)	1231.45642 (86071316)	1399.31384 (86071316)	1412.07251 (86071316)
20.0	464.54211 (86071316)	720.37073 (86071316)	907.73639 (86071316)	954.66180 (86071316)	890.43536 (86071316)
30.0	325.27582 (86080216)	543.43939 (86060816)	691.83496 (86060816)	731.66309 (86010216)	827.84399 (86010216)
40.0	283.77786 (86060816)	398.96536 (86053116)	676.36145 (86053116)	929.86151 (86080416)	1144.57898 (86080416)
50.0	249.41042 (86072916)	408.81265 (86053116)	617.11633 (86053116)	857.70691 (86072616)	1055.02930 (86072616)
60.0	167.21275 (86053116)	298.49039 (86072616)	527.96118 (86072616)	746.03027 (86072616)	871.73438 (86072616)
70.0	141.60065 (86022716)	269.77798 (86072016)	511.06812 (86072016)	805.42230 (86072016)	1034.03369 (86072016)
80.0	174.39946 (86022716)	249.29211 (86042124)	382.98206 (86072016)	673.63947 (86091216)	926.63318 (86091216)
90.0	73.88563 (86012724)	135.36348 (86071516)	337.57886 (86071516)	572.44788 (86091216)	799.04834 (86091216)
100.0	105.22960 (86012724)	135.81477 (86012724)	280.88474 (86050816)	497.75745 (86050816)	717.33270 (86071916)
110.0	144.69057 (86012724)	182.18542 (86052216)	354.92358 (86052216)	594.84442 (86050816)	845.85901 (86042916)
120.0	130.36067 (86042616)	284.71774 (86042616)	495.67276 (86042616)	739.30438 (86090216)	931.58124 (86090216)
130.0	132.17268 (86012808)	263.98941 (86042616)	505.95404 (86042616)	819.43561 (86042616)	1081.75330 (86042616)
140.0	145.17877 (86011116)	219.90291 (86042316)	341.97260 (86050316)	579.68774 (86042816)	843.31348 (86042816)
150.0	277.29117 (86032216)	248.44438 (86101616)	468.42072 (86101616)	757.07013 (86101616)	1053.83411 (86101616)
160.0	243.82092 (86032216)	350.68317c(86082316)	531.83148 (86110316)	697.86511 (86110316)	777.88025 (86110316)
170.0	228.07793 (86032216)	485.86124c(86082316)	761.28119c(86082316)	959.66931c(86082316)	1180.67920 (86110316)
180.0	239.67088c(86082316)	507.74619c(86082316)	812.01025c(86082316)	1095.23792c(86082316)	1247.89734c(86082316)
190.0	333.72534c(86082316)	570.31866c(86082316)	814.56537c(86082316)	1013.19055c(86082316)	1116.99487c(86082316)
200.0	449.41110c(86082316)	749.42395c(86082316)	1029.68872c(86082316)	1204.53088c(86082316)	1237.34729c(86082316)
210.0	482.73926c(86082316)	838.92267c(86082316)	1159.57458c(86082316)	1375.61450c(86082316)	1447.96301c(86082316)
220.0	421.23071 (86051116)	712.91644c(86082316)	982.22443c(86082316)	1168.65637c(86082316)	1258.80542c(86082316)
230.0	424.85019 (86051116)	675.63373 (86051116)	907.84717 (86062616)	1066.43726 (86062616)	1117.91333 (86062616)
240.0	447.19080 (86051716)	647.15985 (86062616)	905.97375 (86062616)	1090.60205 (86062616)	1170.03296 (86062616)
250.0	429.55945 (86051716)	621.04370 (86062616)	834.20148 (86062616)	989.75226 (86062616)	1084.82336 (86062616)
260.0	365.28897 (86051716)	495.74280 (86062616)	675.82343 (86051316)	804.01349 (86051316)	863.86511 (86051316)
270.0	474.33411 (86043016)	687.98560 (86043016)	816.82318 (86043016)	873.76862 (86043016)	915.80176 (86070716)
280.0	576.68811 (86043016)	862.83221 (86043016)	1024.78442 (86043016)	1069.36133 (86043016)	1041.46655 (86043016)
290.0	554.29187 (86043016)	854.61536 (86040616)	1108.97534 (86040616)	1224.70703 (86040616)	1242.66394 (86040616)
300.0	525.27606 (86081016)	945.25073 (86040616)	1268.27063 (86040616)	1436.93823 (86040616)	1485.97742 (86040616)
310.0	531.81158 (86071716)	921.29517 (86040616)	1188.39661 (86040616)	1291.75317 (86040616)	1282.89075 (86040616)
320.0	548.55035 (86071716)	837.36920 (86052916)	1050.72937 (86052916)	1107.24683 (86052916)	1075.29773 (86112516)
330.0	496.11340 (86071716)	701.76703 (86052916)	836.61566 (86082516)	1006.28729 (86082516)	1116.91638 (86082516)
340.0	518.67346 (86080516)	742.95801 (86080516)	917.63458 (86082716)	1063.04810 (86082716)	1114.69702 (86082716)
350.0	575.62305 (86080516)	864.82635 (86080516)	1033.00928 (86071316)	1184.43396 (86071316)	1289.91541 (86100916)
360.0	536.41193 (86071316)	899.32031 (86071316)	1236.65503 (86071316)	1430.85315 (86071316)	1480.27246 (86071316)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	1327.47461 (86071316)	1201.52039 (86071316)	1063.67981 (86071316)	984.59729 (86080316)	937.20831 (86080316)
20.0	970.15033 (86010216)	1016.74664 (86010216)	1025.16138 (86010216)	1005.63324 (86010216)	968.77997 (86010216)
30.0	856.84052 (86080416)	896.41351 (86080416)	897.53699 (86080416)	868.24481 (86080416)	822.27234 (86080416)
40.0	1233.77686 (86080416)	1226.12073 (86080416)	1168.10364 (86080416)	1078.86584 (86080416)	979.44403 (86080416)
50.0	1139.59875 (86072616)	1138.67407 (86072616)	1091.08289 (86072616)	1015.28009 (86072616)	928.72791 (86072616)
60.0	1167.57202 (86100416)	1378.61780 (86100416)	1499.64575 (86100416)	1538.88159 (86100416)	1518.36035 (86100416)
70.0	1155.09473 (86072016)	1191.47180 (86072016)	1225.74634 (86081816)	1301.58069 (86081816)	1325.67615 (86081816)
80.0	1052.22461 (86091216)	1069.82739 (86091216)	1025.04138 (86091216)	957.21930 (86022616)	917.09113 (86022616)
90.0	932.46490 (86091216)	979.80933 (86091216)	972.13708 (86091216)	927.75769 (86091216)	874.32983 (86071916)
100.0	871.50800 (86071916)	949.70856 (86071916)	975.01306 (86071916)	959.61700 (86071916)	919.03540 (86071916)
110.0	1092.73474 (86042916)	1272.95813 (86042916)	1380.94556 (86042916)	1424.09717 (86042916)	1419.16370 (86042916)
120.0	1057.39990 (86042816)	1135.39978 (86042816)	1228.11084 (86042916)	1284.02600 (86042916)	1285.60229 (86042916)
130.0	1234.36609 (86042616)	1284.96289 (86042616)	1266.49353 (86042616)	1218.48242 (86012816)	1259.73157 (86012816)
140.0	1003.33917 (86042816)	1061.81946 (86042816)	1050.55310 (86042816)	1001.13031 (86042616)	934.89795 (86042616)
150.0	1292.00549 (86101616)	1444.82471 (86101616)	1513.81348 (86101616)	1517.72412 (86101616)	1476.74463 (86101616)
160.0	946.02136 (86101616)	1143.93005 (86101616)	1282.38928 (86101616)	1365.91235 (86101616)	1402.50586 (86101616)
170.0	1345.92053 (86110316)	1406.22607 (86110316)	1384.78674 (86110316)	1318.98486 (86110316)	1227.34900 (86110316)
180.0	1255.35718c(86082316)	1243.74365 (86110316)	1330.50220 (86110316)	1362.15601 (86110316)	1351.71008 (86110316)
190.0	1124.93665c(86082316)	1058.60510c(86082316)	953.25635c(86082316)	917.58618 (86102116)	882.57935 (86102116)
200.0	1167.59888c(86082316)	1254.12390 (86120416)	1332.62097 (86120416)	1356.70129 (86120416)	1340.62598 (86120416)
210.0	1399.03259c(86082316)	1275.00806c(86082316)	1119.65125c(86082316)	1067.66589 (86111316)	1018.05957 (86111316)
220.0	1263.38123c(86082316)	1203.71191c(86082316)	1130.80090 (86060516)	1169.91162 (86060516)	1184.10767 (86060516)
230.0	1100.11438 (86062616)	1041.66968 (86062616)	995.63269 (86091616)	946.78265 (86091616)	885.71368 (86091616)
240.0	1164.91968 (86062616)	1106.49573 (86062616)	1082.64832 (86091516)	1034.54089 (86091516)	969.19452 (86091516)
250.0	1123.78674 (86062616)	1136.87219 (86091516)	1162.32153 (86091516)	1161.92078 (86091516)	1141.92053 (86091516)
260.0	888.98706 (86062616)	883.99310 (86062616)	858.66187 (86121416)	862.01379 (86121416)	853.41840 (86121416)
270.0	949.12280 (86062316)	940.85565 (86062316)	899.70795 (86062316)	841.23248 (86062316)	782.19189 (86040416)
280.0	1112.70215 (86062316)	1160.31738 (86062316)	1179.36401 (86062316)	1177.52441 (86062316)	1160.67529 (86062316)
290.0	1200.48938 (86040616)	1121.79175 (86040616)	1028.96594 (86040616)	1008.02332 (86062316)	988.89471 (86062316)
300.0	1459.62390 (86040616)	1382.92859 (86040616)	1283.78809 (86040616)	1178.44348 (86040616)	1075.52734 (86040616)
310.0	1218.25879 (86040616)	1119.93201 (86040616)	1083.23364 (86112516)	1063.67969 (86112516)	1029.38525 (86112516)
320.0	1131.32202 (86112516)	1132.73706 (86112516)	1098.68433 (86112516)	1044.48535 (86112516)	980.57031 (86112516)
330.0	1173.31677 (86082516)	1184.33325 (86082516)	1161.02478 (86082516)	1116.06580 (86082516)	1058.80249 (86082516)
340.0	1179.80884 (86031216)	1285.06494 (86031216)	1348.64917 (86031216)	1377.37476 (86031216)	1379.10449 (86031216)
350.0	1362.91333 (86100916)	1372.42651 (86100916)	1335.19519 (86100916)	1271.19385 (86100916)	1194.48010 (86100916)
360.0	1430.51538 (86071316)	1331.69153 (86071316)	1339.31348 (86112616)	1380.46375 (86112616)	1391.75928 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	883.62494 (86080316)	827.87079 (86080316)	772.56403 (86080316)	719.29883 (86080316)	713.80249 (86073008)
20.0	932.22485 (86072316)	942.08429 (86072316)	937.32208 (86072316)	922.01044 (86072316)	899.39832 (86072316)
30.0	768.52484 (86080416)	755.42798 (86062916)	735.42627 (86062916)	722.48346 (86021116)	730.39374 (86021116)
40.0	881.26801 (86080416)	789.73151 (86080416)	772.19336 (86030416)	771.45178 (86030416)	761.64429 (86030416)
50.0	882.40771 (86100416)	855.50244 (86100416)	819.68060 (86100416)	805.73431 (86112016)	814.73810 (86112016)
60.0	1461.28052 (86100416)	1384.23108 (86100416)	1298.16284 (86100416)	1209.92200 (86100416)	1123.57776 (86100416)
70.0	1313.26196 (86081816)	1276.95764 (86081816)	1226.17712 (86081816)	1167.53748 (86081816)	1105.50525 (86081816)
80.0	863.05939 (86022616)	803.92468 (86022616)	744.65179 (86022616)	687.86438 (86022616)	634.81543 (86022616)
90.0	811.86346 (86071916)	747.47546 (86071916)	685.22278 (86071916)	631.62744 (86041616)	605.45496 (86041616)
100.0	865.67670 (86071916)	807.26880 (86071916)	748.38141 (86071916)	691.57245 (86071916)	638.16028 (86071916)
110.0	1382.65918 (86042916)	1327.12915 (86042916)	1261.36877 (86042916)	1191.23804 (86042916)	1120.48877 (86042916)
120.0	1252.23584 (86042916)	1198.48450 (86042916)	1134.27917 (86042916)	1066.01355 (86042916)	997.62024 (86042916)
130.0	1262.51697 (86012816)	1238.79614 (86012816)	1198.05420 (86012816)	1147.26074 (86012816)	1091.29529 (86012816)
140.0	860.10669 (86042616)	785.22876 (86042616)	714.40009 (86042616)	649.36859 (86042616)	610.75647 (86090316)
150.0	1408.53113 (86101616)	1325.98328 (86101616)	1237.69214 (86101616)	1149.08057 (86101616)	1063.38867 (86101616)
160.0	1405.07849 (86101616)	1384.52820 (86101616)	1348.99048 (86101616)	1304.26233 (86101616)	1254.36475 (86101616)
170.0	1126.49609 (86110316)	1025.97070 (86110316)	930.73254 (86110316)	920.14020 (86012408)	959.96979 (86012408)
180.0	1314.24023 (86110316)	1260.71924 (86110316)	1198.66113 (86110316)	1133.03015 (86110316)	1067.00793 (86110316)
190.0	836.36615 (86102116)	785.57672 (86102116)	734.22833 (86102116)	684.58777 (86102116)	647.35236 (86111324)
200.0	1298.04565 (86120416)	1239.64807 (86120416)	1173.06470 (86120416)	1103.42590 (86120416)	1034.01819 (86120416)
210.0	960.69080 (86111316)	900.48663 (86111316)	840.53198 (86111316)	796.57764 (86032716)	792.16699 (86032716)
220.0	1178.60950 (86060516)	1158.18311 (86060516)	1126.93042 (86060516)	1088.24707 (86060516)	1045.09644 (86060516)
230.0	871.81342 (86102216)	866.66406 (86102216)	857.07288 (86102216)	844.42285 (86102216)	830.77344 (86102216)
240.0	908.98871 (86033116)	915.53723 (86033116)	947.75842 (86111416)	990.70770 (86111416)	1024.46118 (86111416)
250.0	1108.12866 (86091516)	1065.39014 (86091516)	1017.46289 (86091516)	967.10663 (86091516)	916.26404 (86091516)
260.0	836.29999 (86121416)	813.28955 (86121416)	786.37396 (86121416)	757.06091 (86121416)	726.43536 (86121416)
270.0	814.09192 (86040416)	833.81213 (86040416)	842.52301 (86040416)	841.87823 (86040416)	833.63751 (86040416)
280.0	1133.29041 (86062316)	1098.77148 (86062316)	1059.69312 (86062316)	1017.98535 (86062316)	975.07660 (86062316)
290.0	962.29510 (86062316)	931.06732 (86062316)	897.19220 (86062316)	862.04907 (86062316)	826.59430 (86062316)
300.0	979.20099 (86040616)	891.13544 (86040616)	860.47510 (86030916)	849.22534 (86030916)	845.44958 (86122316)
310.0	986.36536 (86112516)	938.82593 (86112516)	889.60553 (86112516)	840.55780 (86112516)	792.84845 (86112516)
320.0	913.53320 (86112516)	847.29901 (86112516)	784.05048 (86112516)	724.88232 (86112516)	670.22900 (86112516)
330.0	995.72205 (86082516)	931.09570 (86082516)	867.60425 (86082516)	806.83124 (86082516)	749.63129 (86082516)
340.0	1360.99780 (86031216)	1328.94788 (86031216)	1287.56018 (86031216)	1240.32043 (86031216)	1189.80627 (86031216)
350.0	1113.97705 (86100916)	1034.88440 (86100916)	959.96478 (86100916)	890.48083 (86100916)	826.82068 (86100916)
360.0	1381.08789 (86112616)	1354.75159 (86112616)	1317.62109 (86112616)	1273.39441 (86112616)	1225.10962 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	712.07330 (86113016)	721.58691 (86113016)	725.22064 (86113016)
20.0	871.98346 (86072316)	841.11627 (86072316)	808.46448 (86072316)
30.0	730.87604 (86021116)	725.56659 (86021116)	714.68799 (86021116)
40.0	745.90466 (86030416)	725.28357 (86030416)	699.22040 (86030416)
50.0	815.07715 (86112016)	808.33374 (86112016)	794.06702 (86112016)
60.0	1041.39819 (86100416)	964.51758 (86100416)	893.37457 (86100416)
70.0	1042.99512 (86081816)	981.84186 (86081816)	923.14398 (86081816)
80.0	585.97888 (86022616)	541.40051 (86022616)	539.42126 (86020716)
90.0	590.80402 (86070316)	584.45361 (86070316)	576.19989 (86070316)
100.0	588.71948 (86071916)	543.39093 (86071916)	502.07141 (86071916)
110.0	1051.42517 (86042916)	985.38513 (86042916)	923.07605 (86042916)
120.0	931.40479 (86042916)	868.62524 (86042916)	812.29565 (86012816)
130.0	1033.45142 (86012816)	975.87921 (86012816)	919.93011 (86012816)
140.0	590.12677 (86090316)	568.27826 (86090316)	555.18207 (86122916)
150.0	982.41113 (86101616)	907.39911 (86101616)	837.82886 (86101616)
160.0	1202.03979 (86101616)	1155.05750 (86111508)	1205.41870 (86111508)
170.0	984.00519 (86012408)	994.63690 (86012408)	994.40082 (86012408)
180.0	1002.56281 (86110316)	940.85413 (86110316)	882.50836 (86110316)
190.0	638.16254 (86111324)	622.85474 (86111324)	607.14154 (86122616)
200.0	966.84241 (86120416)	903.03546 (86120416)	860.57874 (86020908)
210.0	784.75891 (86032716)	774.62683 (86032716)	758.73792 (86032716)
220.0	999.88934 (86060516)	952.66217 (86060516)	904.33923 (86060516)
230.0	814.56903 (86102216)	807.95392 (86101916)	809.52014 (86050924)
240.0	1047.23047 (86111416)	1060.22388 (86111416)	1062.42200 (86111416)
250.0	866.24664 (86091516)	817.90039 (86091516)	771.73608 (86091516)
260.0	695.33087 (86121416)	667.62683 (86020916)	654.34363 (86020916)
270.0	819.49176 (86040416)	807.50299 (86031008)	810.73920 (86031008)
280.0	932.00555 (86062316)	888.91266 (86062316)	845.68860 (86062316)
290.0	822.79681 (86030924)	821.36633 (86030924)	810.56354 (86030924)
300.0	859.35272 (86122316)	863.46301 (86122316)	857.63501 (86122316)
310.0	747.17236 (86112516)	703.90771 (86112516)	663.22449 (86112516)
320.0	620.14032 (86112516)	584.02856c(86083116)	560.01001c(86083116)
330.0	696.38544 (86082516)	658.24286 (86031308)	647.14502 (86031308)
340.0	1138.23914 (86031216)	1086.05127 (86031216)	1034.36743 (86031216)
350.0	807.03033 (86052008)	798.59552 (86052008)	785.06976 (86052008)
360.0	1174.87256 (86112616)	1122.24939 (86112616)	1070.17090 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	459.71237	(86051116)	15.24	0.00	389.49719	(86051116)
30.48	0.00	347.71576c	(86082316)	45.72	0.00	317.44687c	(86082316)
60.96	0.00	271.23529c	(86082316)	76.20	0.00	253.67317	(86010824)
91.44	0.00	189.26393	(86010816)	106.68	0.00	237.15665	(86111324)
121.92	0.00	208.09010	(86101924)	137.16	0.00	223.05246	(86032216)
152.40	0.00	185.58484	(86111324)	167.64	0.00	240.04150	(86032216)
182.88	0.00	237.21071	(86032216)	198.12	0.00	127.83493	(86032108)
213.36	0.00	229.92097	(86011116)	213.36	15.24	192.57123	(86011116)
213.36	30.48	94.83038	(86012808)	213.36	45.72	103.40688	(86022516)
213.36	60.96	110.27122	(86012724)	213.36	76.20	145.21114	(86012724)
213.36	91.44	69.72610	(86012724)	213.36	106.68	72.27760	(86012724)
213.36	121.92	55.57755	(86012724)	213.36	137.16	91.66653	(86022716)
213.36	152.40	112.41174	(86022716)	213.36	167.64	146.38264	(86042116)
213.36	182.88	212.50775	(86072916)	213.36	198.12	254.06845	(86072916)
213.36	213.36	229.05138	(86060816)	213.36	220.98	257.55319	(86060816)
198.12	220.98	267.22388	(86060816)	182.88	220.98	270.36105	(86121116)
167.64	220.98	257.11224	(86071316)	152.40	220.98	289.81400	(86071316)
137.16	220.98	302.26682	(86071316)	121.92	220.98	300.82031	(86071316)
106.68	220.98	300.00314	(86080516)	91.44	220.98	333.57956	(86080516)
76.20	220.98	346.99677	(86080516)	60.96	220.98	343.74380	(86080516)
45.72	220.98	359.75900	(86071716)	30.48	220.98	437.63000	(86071716)
15.24	220.98	508.93411	(86071716)	0.00	220.98	568.97375	(86071716)
0.00	213.36	534.29504	(86071716)	0.00	198.12	468.85440	(86062416)
0.00	182.88	414.25021	(86062416)	0.00	167.64	353.47974	(86062416)
0.00	152.40	316.40311	(86043016)	0.00	137.16	306.17462	(86043016)
0.00	121.92	280.64832	(86043016)	0.00	106.68	230.73425	(86043016)
0.00	91.44	221.09087	(86051716)	0.00	76.20	267.95572	(86051716)
0.00	60.96	318.41165	(86051716)	0.00	45.72	352.34811	(86051716)
0.00	30.48	371.14661	(86051716)	0.00	15.24	396.99011	(86051116)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	1538.88159	ON 86100416:	AT (582.99, 385.64, 0.00, 0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX E

ISCST2 OUTPUT LISTING

METHYLENE CHLORIDE 24-HOUR AVERGAGE EMISSSION

RUN: FMXMC24

```
                    ISCST2 - (DATED 93109)

                    IBM-PC VERSION (2.11 ) ISCST2F
                    (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                    SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  2/29/1996 at  8:50:30


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO Methlyene Chloride 24-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 24
CO POLLUTID MC_24
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79       0.00
SO SRCPARAM FOAMLINE 44.09920      38.10     299.82    24.5307      0.857
SO LOCATION LONGBUN POINT     152.40      17.07       0.00
SO SRCPARAM LONGBUN 25.72458      38.10     299.82    24.5307      0.857
SO LOCATION EXFAN_7 POINT     108.51     152.71       0.00
SO SRCPARAM EXFAN_7 1.316135      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64       0.00
SO SRCPARAM EXFAN_12 1.316135      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88     102.56       0.00
SO SRCPARAM EXFAN_19 1.316135      16.15     299.82    24.6109      1.105
SO BUILDHGT FOAMLINE    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    12.19
SO BUILDHGT FOAMLINE    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID FOAMLINE    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID FOAMLINE    39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID FOAMLINE    37.02    33.83    93.48    88.29    80.42    12.19
SO BUILDWID FOAMLINE    18.62    88.29    93.48    95.83    95.26    91.81
SO BUILDWID FOAMLINE    39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID FOAMLINE    37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT LONGBUN    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID LONGBUN    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID LONGBUN    85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID LONGBUN    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID LONGBUN    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID LONGBUN    85.56    76.71    65.53    76.71    85.56    91.81
SO BUILDWID LONGBUN    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
```

```
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID EXFAN_7   116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID EXFAN_7   146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID EXFAN_7   150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID EXFAN_7   116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID EXFAN_7   146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID EXFAN_7    95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID EXFAN_12    80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID EXFAN_12    39.97    39.64   103.63   114.23    39.97    91.81
SO BUILDWID EXFAN_12    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID EXFAN_12    80.42    88.29    93.48    95.83    95.26    39.09
SO BUILDWID EXFAN_12    39.97    39.64    38.10    39.64    39.97    91.81
SO BUILDWID EXFAN_12    95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDWID EXFAN_19    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID EXFAN_19    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
```

```
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 24 FIRST
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

*** MODELING OPTIONS USED: CONC   RURAL FLAT   DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 24-HR

**This Run Includes: 5 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: MC_24

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMXMC24.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMXMC24.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.44099E+02	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.25725E+02	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_7	0	0.13161E+01	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.13161E+01	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.13161E+01	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

OK

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(      0.0,       0.0,       0.0,       0.0);        (     15.2,       0.0,       0.0,       0.0);
(     30.5,       0.0,       0.0,       0.0);        (     45.7,       0.0,       0.0,       0.0);
(     61.0,       0.0,       0.0,       0.0);        (     76.2,       0.0,       0.0,       0.0);
(     91.4,       0.0,       0.0,       0.0);        (    106.7,       0.0,       0.0,       0.0);
(    121.9,       0.0,       0.0,       0.0);        (    137.2,       0.0,       0.0,       0.0);
(    152.4,       0.0,       0.0,       0.0);        (    167.6,       0.0,       0.0,       0.0);
(    182.9,       0.0,       0.0,       0.0);        (    198.1,       0.0,       0.0,       0.0);
(    213.4,       0.0,       0.0,       0.0);        (    213.4,      15.2,       0.0,       0.0);
(    213.4,      30.5,       0.0,       0.0);        (    213.4,      45.7,       0.0,       0.0);
(    213.4,      61.0,       0.0,       0.0);        (    213.4,      76.2,       0.0,       0.0);
(    213.4,      91.4,       0.0,       0.0);        (    213.4,     106.7,       0.0,       0.0);
(    213.4,     121.9,       0.0,       0.0);        (    213.4,     137.2,       0.0,       0.0);
(    213.4,     152.4,       0.0,       0.0);        (    213.4,     167.6,       0.0,       0.0);
(    213.4,     182.9,       0.0,       0.0);        (    213.4,     198.1,       0.0,       0.0);
(    213.4,     213.4,       0.0,       0.0);        (    213.4,     221.0,       0.0,       0.0);
(    198.1,     221.0,       0.0,       0.0);        (    182.9,     221.0,       0.0,       0.0);
(    167.6,     221.0,       0.0,       0.0);        (    152.4,     221.0,       0.0,       0.0);
(    137.2,     221.0,       0.0,       0.0);        (    121.9,     221.0,       0.0,       0.0);
(    106.7,     221.0,       0.0,       0.0);        (     91.4,     221.0,       0.0,       0.0);
(     76.2,     221.0,       0.0,       0.0);        (     61.0,     221.0,       0.0,       0.0);
(     45.7,     221.0,       0.0,       0.0);        (     30.5,     221.0,       0.0,       0.0);
(     15.2,     221.0,       0.0,       0.0);        (      0.0,     221.0,       0.0,       0.0);
(      0.0,     213.4,       0.0,       0.0);        (      0.0,     198.1,       0.0,       0.0);
(      0.0,     182.9,       0.0,       0.0);        (      0.0,     167.6,       0.0,       0.0);
(      0.0,     152.4,       0.0,       0.0);        (      0.0,     137.2,       0.0,       0.0);
(      0.0,     121.9,       0.0,       0.0);        (      0.0,     106.7,       0.0,       0.0);
(      0.0,      91.4,       0.0,       0.0);        (      0.0,      76.2,       0.0,       0.0);
(      0.0,      61.0,       0.0,       0.0);        (      0.0,      45.7,       0.0,       0.0);
(      0.0,      30.5,       0.0,       0.0);        (      0.0,      15.2,       0.0,       0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN   FORMAT: UNFORM
SURFACE STATION NO.: 12815   UPPER AIR STATION NO.: 12842
NAME: ORLANDO   NAME: TAMPA
YEAR: 1986   YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	64.62398c(86071324)	110.45632c(86071324)	153.77820c(86071324)	180.98230c(86071324)	191.08554c(86071324)
20.0	56.07521c(86071324)	89.63417c(86071324)	114.88485c(86071324)	122.03212c(86071324)	115.79297c(86071324)
30.0	41.68173c(86060824)	64.71577c(86060824)	81.93478c(86060824)	87.77052c(86053124)	96.61325c(86010224)
40.0	34.08523c(86060824)	53.74473c(86053124)	90.93136c(86053124)	111.77843c(86053124)	141.49129 (86080424)
50.0	34.29264 (86072924)	55.03418c(86053124)	82.93037c(86053124)	104.89309 (86072624)	133.50468 (86072624)
60.0	30.91954 (86022724)	39.54100c(86072024)	70.14522c(86072024)	104.43174c(86072024)	132.90935c(86072024)
70.0	31.61823 (86022724)	39.22813 (86022724)	68.45165c(86072024)	106.97662c(86072024)	137.38144c(86072024)
80.0	30.51965 (86022724)	40.18287 (86011924)	52.05294c(86072024)	76.24372c(86072024)	103.79783 (86091224)
90.0	17.97727 (86012724)	25.08934 (86012724)	49.63270c(86071524)	82.00921c(86071524)	104.13966c(86071524)
100.0	18.23339 (86012724)	26.34756 (86012724)	35.17340c(86050824)	69.10752c(86071524)	94.54184c(86071924)
110.0	23.05102 (86012724)	25.09401 (86011324)	46.38017 (86042824)	77.55309 (86042924)	113.07825 (86042924)
120.0	23.66829c(86012824)	33.28165 (86042624)	57.33330 (86042624)	90.60683c(86090224)	114.36475 (86042824)
130.0	27.72893 (86011124)	41.64555c(86012824)	60.97499 (86042624)	99.32565 (86042624)	132.96111 (86042624)
140.0	38.75807 (86011124)	60.72610 (86011124)	50.50911 (86032124)	70.78880 (86050324)	101.84143 (86042824)
150.0	56.30822 (86011124)	58.25737 (86011124)	66.29906 (86011124)	94.18443 (86101624)	129.45226 (86101624)
160.0	44.31867 (86032224)	48.11505 (86032224)	67.00051 (86110324)	90.48270 (86110324)	105.03558 (86110324)
170.0	37.61950 (86032224)	52.09204c(86082324)	81.27655c(86082324)	105.70969 (86110324)	139.97513 (86110324)
180.0	42.31581c(86111324)	54.49638c(86082324)	86.76553c(86082324)	116.74517c(86082324)	132.85365c(86082324)
190.0	45.39690c(86111324)	61.77560c(86111324)	87.04076c(86082324)	108.04263c(86082324)	118.97469c(86082324)
200.0	62.36171 (86010824)	80.22354c(86082324)	109.91673c(86082324)	128.41046c(86082324)	138.09479c(86111324)
210.0	64.11866 (86010824)	89.89091c(86082324)	123.81360c(86082324)	146.63852c(86082324)	154.27757c(86082324)
220.0	51.02184c(86051124)	77.06342c(86051124)	105.88123c(86082324)	126.31975c(86082324)	136.41356c(86082324)
230.0	55.87620c(86051724)	83.16846c(86051124)	115.21424 (86062624)	137.05043 (86062624)	146.48972 (86062624)
240.0	60.77233c(86051724)	77.90916 (86062624)	110.62742 (86062624)	134.73198 (86062624)	146.68100 (86062624)
250.0	59.50095c(86051724)	79.08665c(86051724)	99.58491 (86062624)	118.62089 (86062624)	132.91573 (86091524)
260.0	51.74401c(86051724)	74.28932c(86051324)	105.69244c(86051324)	126.63688c(86051324)	138.12056c(86051324)
270.0	57.08998 (86043024)	82.68748 (86043024)	104.21466c(86051324)	124.32312c(86051324)	134.85971c(86051324)
280.0	67.07754 (86043024)	99.61904 (86043024)	118.47159 (86043024)	124.22488 (86043024)	138.83681 (86062324)
290.0	67.62952c(86051724)	101.65933 (86040624)	134.60994 (86040624)	151.83740 (86040624)	157.40453 (86040624)
300.0	68.94825c(86051724)	114.55441 (86040624)	155.15292 (86040624)	178.79646 (86040624)	188.31665 (86040624)
310.0	67.23714 (86071724)	113.33025 (86040624)	146.72090 (86040624)	160.61310 (86040624)	160.40991 (86040624)
320.0	67.37908 (86071724)	107.26949c(86052924)	134.75529c(86052924)	142.69684c(86052924)	136.57605c(86052924)
330.0	62.58248 (86071724)	91.07554c(86052924)	105.92369c(86052924)	122.89561c(86082524)	136.27124c(86082524)
340.0	84.21647 (86031324)	86.67995 (86031324)	108.56568c(86082724)	125.51842c(86082724)	140.21443 (86031224)
350.0	76.42229 (86031324)	97.23291 (86080524)	124.01017c(86071324)	141.79665c(86071324)	147.82486c(86071324)
360.0	65.00793c(86071324)	107.39388c(86071324)	149.37723c(86071324)	176.91907c(86071324)	189.62596c(86071324)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	189.50717c(86071324)	182.13489c(86071324)	172.23225c(86071324)	161.62694c(86071324)	151.56819c(86071324)
20.0	114.26035 (86080224)	118.52618c(86010224)	119.72932 (86080224)	121.89883 (86072324)	131.66916 (86072324)
30.0	101.04980 (86080424)	108.00483 (86080424)	110.70713 (86080424)	113.74290c(86081924)	119.24237c(86081924)
40.0	159.64919 (86080424)	166.26613 (86080424)	165.44011 (86080424)	159.10132 (86080424)	152.61945 (86072824)
50.0	149.05653 (86072624)	153.50902 (86072624)	151.20490 (86072624)	144.67499 (86072624)	136.31789 (86072624)
60.0	150.63130c(86072024)	158.19418c(86072024)	170.44640 (86100424)	176.03447 (86100424)	174.85170 (86100424)
70.0	153.58101c(86072024)	173.77444c(86081824)	198.93478c(86081824)	214.32581c(86081824)	221.56711c(86081824)
80.0	118.06305 (86091224)	125.73129c(86081824)	136.92818c(86081824)	141.43137c(86081824)	141.57492c(86081824)
90.0	122.58560c(86071924)	139.82129c(86071924)	149.66510c(86071924)	153.46454c(86071924)	153.12465c(86071924)
100.0	118.89106c(86071924)	134.74606c(86071924)	144.31093c(86071924)	148.63292c(86071924)	149.28679c(86071924)
110.0	145.28368 (86042924)	169.35477 (86042924)	184.78764 (86042924)	192.66125 (86042924)	194.96928 (86042924)
120.0	140.94542c(86052224)	159.63985c(86052224)	169.48048c(86052224)	172.19678 (86042924)	175.86778 (86042924)
130.0	154.08044 (86042624)	162.59824 (86042624)	162.01323 (86042624)	172.04623c(86012824)	179.21986c(86012824)
140.0	125.38773 (86042824)	138.69565 (86042824)	143.87802 (86042824)	143.32130 (86042824)	138.90150 (86042824)
150.0	157.85861 (86101624)	176.64946 (86101624)	186.09624 (86101624)	188.12927 (86101624)	184.82007 (86101624)
160.0	127.13855 (86101624)	155.66537 (86101624)	179.60930 (86101624)	199.34247 (86101624)	215.05663 (86101624)
170.0	163.28490 (86110324)	175.58549 (86110324)	178.49194 (86110324)	175.79597 (86110324)	169.43623 (86110324)
180.0	133.56131c(86082324)	145.14294 (86110324)	158.67174 (86110324)	167.03777 (86110324)	171.28792 (86110324)
190.0	119.74009c(86082324)	112.63388c(86082324)	111.07122 (86102124)	111.43865 (86102124)	109.75504 (86102124)
200.0	144.40506c(86111324)	145.67754 (86120424)	154.50560 (86120424)	157.18129 (86120424)	155.28706 (86120424)
210.0	154.46950c(86111324)	160.86835c(86111324)	163.09747c(86111324)	162.17200c(86111324)	159.12810c(86111324)
220.0	137.33086c(86082324)	152.33519 (86060524)	164.26672 (86060524)	172.27039 (86060524)	176.89952 (86060524)
230.0	147.70779 (86062624)	143.54507 (86062624)	137.22942c(86051124)	131.08014c(86051124)	136.84892 (86010924)
240.0	148.67685 (86062624)	144.17012 (86062624)	141.15758 (86091524)	135.39302 (86091524)	127.31747 (86091524)
250.0	145.47490 (86091524)	153.34969 (86091524)	157.20714 (86091524)	157.82948 (86091524)	156.03432 (86091524)
260.0	143.21989c(86051324)	143.13191c(86051324)	139.91348c(86051324)	135.07378c(86051324)	129.56343c(86051324)
270.0	138.81320c(86051324)	137.58722c(86051324)	133.56813c(86051324)	128.30191c(86051324)	122.66740c(86051324)
280.0	152.02995 (86062324)	159.71965 (86062324)	163.09004 (86062324)	163.22908 (86062324)	161.03569 (86062324)
290.0	155.59383 (86040624)	149.14017 (86040624)	140.66321 (86040624)	135.86876 (86062324)	134.96613 (86062324)
300.0	188.20068 (86040624)	181.26341 (86040624)	170.82994 (86040624)	164.07802 (86030924)	173.49176 (86030924)
310.0	152.81133 (86040624)	140.79059 (86040624)	134.27992c(86100324)	131.10580c(86100324)	125.84645c(86100324)
320.0	132.56732 (86081124)	135.90782 (86081124)	134.96552 (86081124)	131.35600 (86081124)	126.28226 (86081124)
330.0	143.04784c(86082524)	144.31160c(86082524)	144.27307 (86031324)	156.62418 (86031324)	167.44228 (86031324)
340.0	163.16235 (86031224)	180.24648 (86031224)	191.36169 (86031224)	197.19777 (86031224)	198.74951 (86031224)
350.0	155.69490 (86100924)	158.98613 (86100924)	157.74959 (86100924)	154.00854 (86100924)	149.08852 (86100924)
360.0	192.07825c(86071324)	189.20903c(86071324)	183.37962c(86071324)	176.26341c(86071324)	169.13719c(86071324)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	153.92349 (86082024)	163.25174 (86082024)	170.66173 (86082024)	176.22516 (86082024)	180.09346 (86082024)
20.0	138.21376 (86072324)	141.98116 (86072324)	143.43230 (86072324)	143.10750 (86072324)	141.42171 (86072324)
30.0	121.73094c(86081924)	121.84637c(86081924)	120.19240c(86081924)	117.29845c(86081924)	113.59102c(86081924)
40.0	147.55176 (86072824)	141.23293 (86072824)	134.24240 (86072824)	128.61775 (86070224)	127.54722 (86070224)
50.0	127.59241 (86072624)	119.20779 (86072624)	112.24872 (86112024)	117.59003 (86112024)	121.48153 (86112024)
60.0	169.43997 (86100424)	161.57588 (86100424)	152.48929 (86100424)	142.98045 (86100424)	133.54640 (86100424)
70.0	222.95300c(86081824)	220.41573c(86081824)	215.39934c(86081824)	208.91531c(86081824)	201.64380c(86081824)
80.0	139.39011c(86081824)	136.09744c(86081824)	132.33253c(86081824)	128.38785c(86081824)	124.38220c(86081824)
90.0	150.42670c(86071924)	146.57884c(86071924)	142.22176c(86071924)	137.98856c(86071924)	134.03355c(86071924)
100.0	147.58180c(86071924)	144.35870c(86071924)	140.15582c(86071924)	135.32655c(86071924)	130.11469c(86071924)
110.0	193.56586 (86042924)	189.80876 (86042924)	184.50990 (86042924)	178.45311 (86042924)	172.02989 (86042924)
120.0	174.36444 (86042924)	169.45538 (86042924)	162.46939 (86042924)	154.37233 (86042924)	145.79880 (86042924)
130.0	181.49670c(86012824)	180.27420c(86012824)	176.67763c(86012824)	171.54158c(86012824)	165.46117c(86012824)
140.0	134.27116 (86042624)	128.93599 (86042624)	123.31144 (86042624)	117.69027 (86042624)	112.21796 (86042624)
150.0	178.04610 (86101624)	169.24306 (86101624)	159.42070 (86101624)	149.25854 (86101624)	139.19466 (86101624)
160.0	227.33405 (86101624)	236.63496 (86101624)	243.32056 (86101624)	247.71040 (86101624)	250.10368 (86101624)
170.0	161.26888 (86110324)	175.11559 (86120524)	186.81941 (86120524)	195.20494 (86120524)	200.54424 (86120524)
180.0	172.67982 (86110324)	172.07619 (86110324)	170.05992 (86110324)	177.50146 (86122824)	186.35081 (86122824)
190.0	107.00928 (86102124)	104.91246c(86111324)	103.31490c(86111324)	100.88451c(86111324)	100.71613c(86122624)
200.0	150.38628 (86120424)	143.71568 (86120424)	136.15508 (86120424)	135.03429 (86102824)	140.12117 (86102824)
210.0	154.63295c(86111324)	149.14806c(86111324)	143.03258c(86111324)	136.59012c(86111324)	129.98715c(86111324)
220.0	178.72626 (86060524)	178.28149 (86060524)	176.04376 (86060524)	173.29907 (86010824)	177.54553 (86010824)
230.0	150.70518 (86010924)	161.99614 (86010924)	170.66261 (86010924)	176.92650 (86010924)	181.03215 (86010924)
240.0	132.50056 (86010924)	142.39343 (86010924)	150.36559 (86010924)	156.57524 (86010924)	161.27388 (86010924)
250.0	152.56844 (86091524)	148.04904 (86091524)	142.94936 (86091524)	137.61113 (86091524)	132.26729 (86091524)
260.0	123.95714c(86051324)	118.57361c(86051324)	113.58294c(86051324)	109.05421c(86051324)	105.24193c(86091024)
270.0	119.26530 (86051624)	120.21228 (86051624)	121.71647 (86051524)	122.98852 (86051524)	123.34345 (86051524)
280.0	157.21877 (86062324)	152.31990 (86062324)	146.74582 (86062324)	140.79614 (86062324)	134.68712 (86062324)
290.0	134.14864 (86052624)	132.42317 (86052624)	129.79167 (86052624)	126.55731 (86052624)	126.13226 (86030924)
300.0	179.86804 (86030924)	183.53807 (86030924)	184.92015 (86030924)	184.44371 (86030924)	182.69597 (86030924)
310.0	123.61481 (86122324)	130.39119 (86122324)	135.31152 (86122324)	138.54240 (86122324)	140.30577 (86122324)
320.0	120.55167 (86081124)	114.66821 (86081124)	108.92567 (86081124)	103.48194 (86081124)	98.40801 (86081124)
330.0	176.40205 (86031324)	183.38300 (86031324)	188.42729 (86031324)	191.85864 (86031324)	193.71547 (86031324)
340.0	197.03001 (86031224)	192.93750 (86031224)	187.21104 (86031224)	180.43004 (86031224)	173.03345 (86031224)
350.0	143.76445 (86100924)	138.44673 (86100924)	133.32330 (86100924)	128.46510 (86100924)	123.87992 (86100924)
360.0	162.99318 (86112624)	161.38985 (86112624)	158.56340 (86112624)	155.98015 (86082024)	165.47153 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	182.45668 (86082024)	183.12144 (86082024)	182.57524 (86082024)
20.0	138.74904 (86072324)	135.24834 (86072324)	134.43564 (86011024)
30.0	111.23856 (86072824)	110.78739 (86071024)	110.45576 (86071024)
40.0	125.47529 (86070224)	122.77652 (86070224)	120.60612 (86021024)
50.0	124.19659 (86112024)	125.88150 (86112024)	126.33078 (86112024)
60.0	124.47635 (86100424)	115.93738 (86100424)	107.98435 (86100424)
70.0	194.02921c(86081824)	186.35461c(86081824)	178.79543c(86081824)
80.0	120.35863c(86081824)	116.33376c(86081824)	112.31881c(86081824)
90.0	130.47958c(86071924)	127.35487c(86071924)	124.64201c(86071924)
100.0	124.69489c(86071924)	119.19632c(86071924)	113.71558c(86071924)
110.0	165.48753 (86042924)	159.00887 (86042924)	152.70840 (86042924)
120.0	137.16907 (86042924)	133.70116 (86022024)	133.17726 (86022024)
130.0	158.88222c(86012824)	152.13120c(86012824)	145.30568c(86012824)
140.0	109.77746 (86032124)	112.16880 (86122924)	115.09214 (86122924)
150.0	129.49774 (86101624)	124.03290 (86032124)	122.76264 (86032124)
160.0	250.78723 (86101624)	249.93355 (86101624)	248.02727 (86101624)
170.0	203.36232 (86120524)	204.14587 (86120524)	202.90446 (86120524)
180.0	192.92377 (86122824)	197.05626 (86122824)	198.93182 (86122824)
190.0	106.57166c(86122624)	111.28461c(86122624)	114.54167c(86122624)
200.0	144.12993 (86102824)	147.21315 (86102824)	148.66817 (86102824)
210.0	125.54034 (86101924)	126.53357 (86010724)	127.96084 (86010724)
220.0	179.99907 (86010824)	180.52034 (86010824)	179.02599 (86010824)
230.0	183.35246 (86010924)	183.87410 (86010924)	182.28729 (86010924)
240.0	164.45146 (86010924)	166.00986 (86010924)	165.87379 (86010924)
250.0	127.06695 (86091524)	122.01395 (86091524)	117.06204 (86091524)
260.0	106.83766c(86091024)	107.47818c(86091024)	106.79547c(86091024)
270.0	122.94906 (86051524)	121.80856 (86051524)	119.69334 (86051524)
280.0	128.57199 (86062324)	122.48333 (86062324)	116.40439 (86062324)
290.0	125.69578 (86030924)	124.04952 (86030924)	121.27930 (86030924)
300.0	179.69731 (86030924)	175.60631 (86030924)	170.26385 (86030924)
310.0	140.88272 (86122324)	140.32785 (86122324)	137.99538 (86122324)
320.0	96.72839 (86031324)	95.62400 (86031324)	93.93064 (86031324)
330.0	194.34076 (86031324)	193.22185 (86031324)	190.70581 (86031324)
340.0	165.38535 (86031224)	157.60889 (86031224)	149.87074 (86031224)
350.0	119.54764 (86100924)	115.24587 (86100924)	111.27637 (86052024)
360.0	173.36354 (86082024)	178.96797 (86082024)	183.13148 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	55.71948c	(86051124)	15.24	0.00	47.10822c	(86051124)
30.48	0.00	46.84210	(86101924)	45.72	0.00	55.31099	(86010824)
60.96	0.00	59.65804	(86010824)	76.20	0.00	54.98082	(86010824)
91.44	0.00	46.01421	(86010824)	106.68	0.00	38.79987c	(86111324)
121.92	0.00	28.63645c	(86111324)	137.16	0.00	35.49481	(86032224)
152.40	0.00	30.02495	(86032224)	167.64	0.00	38.23190	(86032224)
182.88	0.00	54.08197	(86011124)	198.12	0.00	32.51913	(86011124)
213.36	0.00	56.29692	(86011124)	213.36	15.24	45.93500	(86011124)
213.36	30.48	23.52442	(86011124)	213.36	45.72	14.94606c	(86012824)
213.36	60.96	20.06188	(86012724)	213.36	76.20	22.21465	(86012724)
213.36	91.44	11.70799	(86012724)	213.36	106.68	14.94157	(86012724)
213.36	121.92	10.27336	(86012724)	213.36	137.16	14.65028	(86022724)
213.36	152.40	17.51129	(86022724)	213.36	167.64	28.30229	(86022724)
213.36	182.88	28.05085	(86072924)	213.36	198.12	34.75030	(86072924)
213.36	213.36	32.89644	(86072924)	213.36	220.98	31.35760	(86072924)
198.12	220.98	32.01286c	(86060824)	182.88	220.98	36.24530c	(86121124)
167.64	220.98	36.18229	(86072924)	152.40	220.98	34.59229c	(86071324)
137.16	220.98	35.97842c	(86071324)	121.92	220.98	42.46001	(86031324)
106.68	220.98	57.97878	(86031324)	91.44	220.98	66.17210	(86031324)
76.20	220.98	72.59972	(86031324)	60.96	220.98	60.16291	(86031324)
45.72	220.98	45.47130	(86071724)	30.48	220.98	54.27116	(86071724)
15.24	220.98	62.37046	(86071724)	0.00	220.98	70.13430	(86071724)
0.00	213.36	66.19880	(86071724)	0.00	198.12	58.50073	(86071724)
0.00	182.88	52.09208c	(86051724)	0.00	167.64	48.34610c	(86051724)
0.00	152.40	42.24865c	(86051724)	0.00	137.16	36.49470c	(86051724)
0.00	121.92	34.42568c	(86051724)	0.00	106.68	30.78432c	(86051724)
0.00	91.44	30.82074c	(86051724)	0.00	76.20	36.78680c	(86051724)
0.00	60.96	43.54214c	(86051724)	0.00	45.72	47.90864c	(86051724)
0.00	30.48	50.20238c	(86051724)	0.00	15.24	51.51301c	(86051724)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	250.78723	ON 86101624: AT (	414.50, -735.08, 0.00, 0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

********* FATAL ERROR MESSAGES *********
*** NONE ***

********* WARNING MESSAGES *********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX F

ISCST2 OUTPUT LISTING

METHYLENE CHLORIDE ANNUAL AVERGAGE EMISSSION

RUN: FMXMCAN

```
ISCST2 - (DATED 93109)

IBM-PC VERSION (2.11 ) ISCST2F
(C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  2/28/1996 at 17:03:51


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO Methlyene Chloride Rolling Annual Average Emissions; 551,192 lb/yr
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME PERIOD
CO POLLUTID MC_AN
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79       0.00
SO SRCPARAM FOAMLINE 4.756741      38.10     299.82    24.5307      0.857
SO LOCATION LONGBUN POINT     152.40      17.07       0.00
SO SRCPARAM LONGBUN 2.774765      38.10     299.82    24.5307      0.857
SO LOCATION EXFAN_7 POINT     108.51     152.71       0.00
SO SRCPARAM EXFAN_7 0.147570      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64       0.00
SO SRCPARAM EXFAN_12 0.147570      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88     102.56       0.00
SO SRCPARAM EXFAN_19 0.147570      16.15     299.82    24.6109      1.105
SO BUILDHGT FOAMLINE    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     12.19
SO BUILDHGT FOAMLINE    12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     15.24
SO BUILDWID FOAMLINE    80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID FOAMLINE    39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID FOAMLINE    37.02     33.83     93.48     88.29     80.42     12.19
SO BUILDWID FOAMLINE    18.62     88.29     93.48     95.83     95.26     91.81
SO BUILDWID FOAMLINE    39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID FOAMLINE    37.02     33.83     93.48     88.29     80.42     70.11
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID LONGBUN    80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID LONGBUN    85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID LONGBUN    95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID LONGBUN    80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID LONGBUN    85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID LONGBUN    95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_7    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7    10.67     10.67     10.67     10.67     10.67     10.67
```

```
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7    150.26    148.19    141.62    130.75    115.90     97.54
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7     95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64    103.63    114.23     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64     38.10     39.64     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_19     80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID EXFAN_19     85.56     39.64     38.10     39.64     39.97     39.09
SO BUILDWID EXFAN_19     37.02     95.83     93.48     88.29     80.42     70.11
SO BUILDWID EXFAN_19     80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID EXFAN_19     85.56     39.64     38.10     39.64     39.97     39.09
SO BUILDWID EXFAN_19     37.02     95.83     93.48     88.29     80.42     70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
```

```
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes: 5 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: MC_AN

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMXMCAN.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMXMCAN.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.47567E+01	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.27748E+01	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_7	0	0.14757E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.14757E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.14757E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

OK

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***

X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***

(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***

(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(     0.0,      0.0,      0.0,      0.0);         (    15.2,      0.0,      0.0,      0.0);
(    30.5,      0.0,      0.0,      0.0);         (    45.7,      0.0,      0.0,      0.0);
(    61.0,      0.0,      0.0,      0.0);         (    76.2,      0.0,      0.0,      0.0);
(    91.4,      0.0,      0.0,      0.0);         (   106.7,      0.0,      0.0,      0.0);
(   121.9,      0.0,      0.0,      0.0);         (   137.2,      0.0,      0.0,      0.0);
(   152.4,      0.0,      0.0,      0.0);         (   167.6,      0.0,      0.0,      0.0);
(   182.9,      0.0,      0.0,      0.0);         (   198.1,      0.0,      0.0,      0.0);
(   213.4,      0.0,      0.0,      0.0);         (   213.4,     15.2,      0.0,      0.0);
(   213.4,     30.5,      0.0,      0.0);         (   213.4,     45.7,      0.0,      0.0);
(   213.4,     61.0,      0.0,      0.0);         (   213.4,     76.2,      0.0,      0.0);
(   213.4,     91.4,      0.0,      0.0);         (   213.4,    106.7,      0.0,      0.0);
(   213.4,    121.9,      0.0,      0.0);         (   213.4,    137.2,      0.0,      0.0);
(   213.4,    152.4,      0.0,      0.0);         (   213.4,    167.6,      0.0,      0.0);
(   213.4,    182.9,      0.0,      0.0);         (   213.4,    198.1,      0.0,      0.0);
(   213.4,    213.4,      0.0,      0.0);         (   213.4,    221.0,      0.0,      0.0);
(   198.1,    221.0,      0.0,      0.0);         (   182.9,    221.0,      0.0,      0.0);
(   167.6,    221.0,      0.0,      0.0);         (   152.4,    221.0,      0.0,      0.0);
(   137.2,    221.0,      0.0,      0.0);         (   121.9,    221.0,      0.0,      0.0);
(   106.7,    221.0,      0.0,      0.0);         (    91.4,    221.0,      0.0,      0.0);
(    76.2,    221.0,      0.0,      0.0);         (    61.0,    221.0,      0.0,      0.0);
(    45.7,    221.0,      0.0,      0.0);         (    30.5,    221.0,      0.0,      0.0);
(    15.2,    221.0,      0.0,      0.0);         (     0.0,    221.0,      0.0,      0.0);
(     0.0,    213.4,      0.0,      0.0);         (     0.0,    198.1,      0.0,      0.0);
(     0.0,    182.9,      0.0,      0.0);         (     0.0,    167.6,      0.0,      0.0);
(     0.0,    152.4,      0.0,      0.0);         (     0.0,    137.2,      0.0,      0.0);
(     0.0,    121.9,      0.0,      0.0);         (     0.0,    106.7,      0.0,      0.0);
(     0.0,     91.4,      0.0,      0.0);         (     0.0,     76.2,      0.0,      0.0);
(     0.0,     61.0,      0.0,      0.0);         (     0.0,     45.7,      0.0,      0.0);
(     0.0,     30.5,      0.0,      0.0);         (     0.0,     15.2,      0.0,      0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_AN IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00
10.00	0.52424	0.84393	1.14506	1.40629	1.60546	1.73947	1.82701	1.87941	1.90768
20.00	0.51062	0.79367	1.06766	1.29977	1.47595	1.59557	1.67300	1.71981	1.74399
30.00	0.44166	0.68582	0.91019	1.12444	1.29070	1.39953	1.46388	1.49911	1.51306
40.00	0.36645	0.57283	0.80480	1.03407	1.22347	1.35714	1.44094	1.49238	1.51953
50.00	0.31277	0.52831	0.76633	0.99759	1.18266	1.31125	1.39120	1.43909	1.46342
60.00	0.25978	0.44565	0.66442	0.89078	1.09185	1.24616	1.35348	1.42633	1.47184
70.00	0.17419	0.34512	0.57545	0.82468	1.05613	1.23869	1.36907	1.45885	1.51587
80.00	0.15567	0.29246	0.48675	0.72330	0.95607	1.13521	1.25235	1.32058	1.35238
90.00	0.07335	0.18325	0.37996	0.62920	0.85370	1.01194	1.10563	1.15452	1.17072
100.00	0.06787	0.17804	0.38085	0.63763	0.86569	1.02073	1.10445	1.14062	1.14351
110.00	0.09899	0.22492	0.45931	0.76207	1.03811	1.23602	1.35477	1.41676	1.43639
120.00	0.12309	0.26508	0.50054	0.81708	1.12447	1.36314	1.52276	1.61977	1.66653
130.00	0.13673	0.27898	0.48859	0.78013	1.07277	1.29961	1.44670	1.52990	1.56435
140.00	0.15005	0.29293	0.44719	0.66995	0.90281	1.08614	1.20735	1.27580	1.30588
150.00	0.18340	0.31320	0.45984	0.63423	0.81028	0.95192	1.04981	1.11049	1.14520
160.00	0.21176	0.36189	0.52146	0.68019	0.82936	0.95268	1.04742	1.11494	1.16347
170.00	0.23755	0.40275	0.57959	0.76876	0.94803	1.09100	1.19514	1.26314	1.30725
180.00	0.26051	0.41967	0.59321	0.77434	0.94391	1.08320	1.19025	1.26951	1.33221
190.00	0.29069	0.43496	0.60406	0.77483	0.92380	1.03680	1.11524	1.16671	1.20112
200.00	0.34554	0.49322	0.66166	0.82497	0.96031	1.06022	1.12651	1.16813	1.19393
210.00	0.44222	0.62674	0.82915	1.01483	1.15618	1.25348	1.31256	1.34682	1.36618
220.00	0.54642	0.79416	1.06110	1.29535	1.46419	1.57380	1.63493	1.66404	1.67262
230.00	0.57426	0.90561	1.22832	1.49653	1.69389	1.83046	1.91767	1.96824	1.99444
240.00	0.56543	0.93170	1.27699	1.54900	1.74206	1.87512	1.96384	2.02103	2.05771
250.00	0.53106	0.89410	1.22915	1.48748	1.66470	1.78001	1.84754	1.88285	1.89837
260.00	0.53346	0.88535	1.20499	1.45083	1.62502	1.74539	1.82301	1.87088	1.89931
270.00	0.56042	0.92482	1.24717	1.49372	1.67105	1.79684	1.88161	1.93738	1.97348
280.00	0.57423	0.94530	1.26154	1.49089	1.64650	1.74958	1.81369	1.85203	1.87447
290.00	0.57991	0.94511	1.25262	1.46995	1.61142	1.69907	1.74777	1.77122	1.77970
300.00	0.61250	0.98750	1.29593	1.50879	1.64302	1.72400	1.76682	1.78570	1.79114
310.00	0.65211	1.02262	1.31908	1.51133	1.61863	1.66940	1.68015	1.66663	1.64129
320.00	0.62670	0.97948	1.24383	1.40557	1.48672	1.51655	1.51046	1.48398	1.44776
330.00	0.57075	0.90093	1.15413	1.31097	1.38999	1.41710	1.41018	1.38424	1.34947
340.00	0.53612	0.86255	1.12540	1.30340	1.41068	1.46872	1.49482	1.49958	1.49200
350.00	0.54898	0.89729	1.19289	1.41360	1.56168	1.65145	1.70079	1.72094	1.72264
360.00	0.53269	0.86261	1.16219	1.39634	1.56133	1.66668	1.73400	1.77328	1.79463

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_AN IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00
10.00	1.91961	1.92015	1.91178	1.89645	1.87582	1.85053	1.82257	1.78918	1.75283
20.00	1.75277	1.75092	1.74094	1.72405	1.70210	1.67578	1.64681	1.61348	1.57675
30.00	1.51391	1.50740	1.49631	1.48172	1.46474	1.44586	1.42535	1.40261	1.37656
40.00	1.53039	1.53107	1.52448	1.51195	1.49511	1.47462	1.45143	1.42652	1.39635
50.00	1.47232	1.47183	1.46537	1.45425	1.43987	1.42279	1.40344	1.38248	1.35804
60.00	1.49788	1.51070	1.51478	1.51216	1.50452	1.49327	1.47868	1.46197	1.44232
70.00	1.54786	1.56253	1.56505	1.55831	1.54449	1.52563	1.50262	1.47705	1.44932
80.00	1.35886	1.35017	1.33293	1.31041	1.28493	1.25753	1.22917	1.20041	1.17164
90.00	1.16524	1.14718	1.12288	1.09504	1.06570	1.03562	1.00555	0.97590	0.94695
100.00	1.12595	1.09809	1.06637	1.03347	1.00097	0.96934	0.93897	0.90993	0.88220
110.00	1.42771	1.40288	1.36998	1.33293	1.29444	1.25567	1.21749	1.18036	1.14448
120.00	1.67736	1.66606	1.64214	1.61070	1.57511	1.53706	1.49816	1.45910	1.42024
130.00	1.56391	1.54264	1.50981	1.47046	1.42763	1.38304	1.33797	1.29316	1.24910
140.00	1.30866	1.29517	1.27280	1.24544	1.21572	1.18465	1.15308	1.12181	1.09104
150.00	1.16216	1.16823	1.16765	1.16237	1.15408	1.14254	1.12893	1.11400	1.09705
160.00	1.19945	1.22670	1.24744	1.26232	1.27269	1.27806	1.27937	1.27716	1.27151
170.00	1.33505	1.35163	1.36021	1.36258	1.36001	1.35267	1.34173	1.32799	1.31165
180.00	1.38288	1.42523	1.46079	1.49070	1.51471	1.53250	1.54553	1.55281	1.55374
190.00	1.22391	1.23929	1.24932	1.25611	1.25965	1.25994	1.25844	1.25420	1.24456
200.00	1.20914	1.21759	1.22116	1.22182	1.21970	1.21483	1.20839	1.20041	1.18623
210.00	1.37661	1.38199	1.38335	1.38231	1.37809	1.37139	1.36250	1.35171	1.33257
220.00	1.66849	1.65679	1.64010	1.62085	1.59914	1.57649	1.55321	1.52900	1.49738
230.00	2.00435	2.00317	1.99413	1.97958	1.96023	1.93853	1.91361	1.88546	1.84864
240.00	2.08091	2.09408	2.09998	2.09947	2.09359	2.08365	2.06914	2.04833	2.01732
250.00	1.90194	1.89746	1.88783	1.87401	1.85701	1.83746	1.81585	1.78925	1.75453
260.00	1.91415	1.91897	1.91587	1.90617	1.89121	1.87179	1.84879	1.81991	1.78062
270.00	1.99477	2.00427	2.00410	1.99570	1.98072	1.96025	1.93550	1.90430	1.86103
280.00	1.88581	1.88903	1.88598	1.87761	1.86497	1.84868	1.82940	1.80370	1.76731
290.00	1.77782	1.76831	1.75298	1.73273	1.70862	1.68138	1.65170	1.61643	1.57314
300.00	1.78774	1.77771	1.76238	1.74304	1.72009	1.69450	1.66636	1.63297	1.59109
310.00	1.61003	1.57554	1.53939	1.50265	1.46593	1.42974	1.39391	1.35655	1.31443
320.00	1.40792	1.36691	1.32627	1.28661	1.24832	1.21144	1.17560	1.13895	1.10072
330.00	1.31270	1.27667	1.24218	1.21024	1.18061	1.15305	1.12693	1.10004	1.07186
340.00	1.47825	1.46085	1.44083	1.41954	1.39709	1.37392	1.35015	1.32331	1.29469
350.00	1.71375	1.69805	1.67739	1.65373	1.62783	1.59985	1.57097	1.53796	1.50370
360.00	1.80494	1.80813	1.80565	1.79946	1.78957	1.77647	1.76171	1.74020	1.71657

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_AN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
0.00	0.00	0.59094	15.24	0.00	0.51400
30.48	0.00	0.43418	45.72	0.00	0.35568
60.96	0.00	0.29188	76.20	0.00	0.22743
91.44	0.00	0.18337	106.68	0.00	0.15364
121.92	0.00	0.13568	137.16	0.00	0.13271
152.40	0.00	0.12919	167.64	0.00	0.13189
182.88	0.00	0.13847	198.12	0.00	0.13564
213.36	0.00	0.16056	213.36	15.24	0.12969
213.36	30.48	0.10066	213.36	45.72	0.08162
213.36	60.96	0.06819	213.36	76.20	0.04655
213.36	91.44	0.02714	213.36	106.68	0.02889
213.36	121.92	0.03028	213.36	137.16	0.07686
213.36	152.40	0.10912	213.36	167.64	0.16040
213.36	182.88	0.20709	213.36	198.12	0.26605
213.36	213.36	0.32578	213.36	220.98	0.35272
198.12	220.98	0.34779	182.88	220.98	0.33748
167.64	220.98	0.32785	152.40	220.98	0.33461
137.16	220.98	0.29865	121.92	220.98	0.28335
106.68	220.98	0.28150	91.44	220.98	0.30414
76.20	220.98	0.31309	60.96	220.98	0.34426
45.72	220.98	0.40794	30.48	220.98	0.49004
15.24	220.98	0.57738	0.00	220.98	0.66736
0.00	213.36	0.63331	0.00	198.12	0.56244
0.00	182.88	0.47857	0.00	167.64	0.39367
0.00	152.40	0.33946	0.00	137.16	0.30654
0.00	121.92	0.28807	0.00	106.68	0.27893
0.00	91.44	0.27806	0.00	76.20	0.29034
0.00	60.96	0.33394	0.00	45.72	0.40097
0.00	30.48	0.46549	0.00	15.24	0.53287

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF MC_AN IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC		RECEPTOR (XR,	YR,	ZELEV,	ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	2.09998	AT (	-499.54,	-239.36,	0.00,	0.00)	GP	POLAR_1
	2ND HIGHEST VALUE IS	2.09947	AT (	-542.84,	-264.36,	0.00,	0.00)	GP	POLAR_1
	3RD HIGHEST VALUE IS	2.09408	AT (	-456.24,	-214.36,	0.00,	0.00)	GP	POLAR_1
	4TH HIGHEST VALUE IS	2.09359	AT (	-586.14,	-289.36,	0.00,	0.00)	GP	POLAR_1
	5TH HIGHEST VALUE IS	2.08365	AT (	-629.44,	-314.36,	0.00,	0.00)	GP	POLAR_1
	6TH HIGHEST VALUE IS	2.08091	AT (	-412.94,	-189.36,	0.00,	0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

```
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT


*** Message Summary For ISC2 Model Execution ***

 --------- Summary of Total Messages --------

A Total of          0 Fatal Error Message(s)
A Total of          0 Warning Message(s)
A Total of        328 Informational Message(s)

A Total of        328 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES    ********
              ***  NONE  ***


   ************************************
   *** ISCST2 Finishes Successfully ***
   ************************************
```

APPENDIX I

ISCST2 OUTPUT LISTING

1,1,1-TRICHLOROETHANE 8-HOUR AVERGAGE EMISSSION

RUN: FMX1118

```
                    ISCST2 - (DATED 93109)

                    IBM-PC VERSION (2.11 ) ISCST2F
                    (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                    SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  2/29/1996 at  9:09:18


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO 1,1,1-Trichloroethane 8-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 8
CO POLLUTID 111_8
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION EXFAN_7 POINT     108.51      152.71       0.00
SO SRCPARAM EXFAN_7 0.104998       16.15      299.82     24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52      110.64       0.00
SO SRCPARAM EXFAN_12 0.104998       16.15      299.82     24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88      102.56       0.00
SO SRCPARAM EXFAN_19 0.104998       16.15      299.82     24.6109      1.105
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7    150.26    148.19    141.62    130.75    115.90     97.54
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7     95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64    103.63    114.23     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64     38.10     39.64     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_19     80.42     88.29     93.48     95.83     95.26     91.81
```

```
SO BUILDWID EXFAN_19    85.56     39.64     38.10     39.64     39.97     39.09
SO BUILDWID EXFAN_19    37.02     95.83     93.48     88.29     80.42     70.11
SO BUILDWID EXFAN_19    80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID EXFAN_19    85.56     39.64     38.10     39.64     39.97     39.09
SO BUILDWID EXFAN_19    37.02     95.83     93.48     88.29     80.42     70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
```

```
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 8 FIRST
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 8-HR

**This Run Includes: 3 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: 111_8

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMX1118.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMX1118.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EXFAN_7	0	0.10500E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.10500E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	OK
EXFAN_19	0	0.10500E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	EXFAN_7 , EXFAN_12, EXFAN_19,

*** ISCST2 - VERSION 93109 ***   *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) ***   02/29/96
*** 1,1,1-Trichloroethane 8-hr Average Emissions ***   09:09:18
PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC   RURAL FLAT   DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(      0.0,       0.0,       0.0,       0.0);       (     15.2,       0.0,       0.0,       0.0);
(     30.5,       0.0,       0.0,       0.0);       (     45.7,       0.0,       0.0,       0.0);
(     61.0,       0.0,       0.0,       0.0);       (     76.2,       0.0,       0.0,       0.0);
(     91.4,       0.0,       0.0,       0.0);       (    106.7,       0.0,       0.0,       0.0);
(    121.9,       0.0,       0.0,       0.0);       (    137.2,       0.0,       0.0,       0.0);
(    152.4,       0.0,       0.0,       0.0);       (    167.6,       0.0,       0.0,       0.0);
(    182.9,       0.0,       0.0,       0.0);       (    198.1,       0.0,       0.0,       0.0);
(    213.4,       0.0,       0.0,       0.0);       (    213.4,      15.2,       0.0,       0.0);
(    213.4,      30.5,       0.0,       0.0);       (    213.4,      45.7,       0.0,       0.0);
(    213.4,      61.0,       0.0,       0.0);       (    213.4,      76.2,       0.0,       0.0);
(    213.4,      91.4,       0.0,       0.0);       (    213.4,     106.7,       0.0,       0.0);
(    213.4,     121.9,       0.0,       0.0);       (    213.4,     137.2,       0.0,       0.0);
(    213.4,     152.4,       0.0,       0.0);       (    213.4,     167.6,       0.0,       0.0);
(    213.4,     182.9,       0.0,       0.0);       (    213.4,     198.1,       0.0,       0.0);
(    213.4,     213.4,       0.0,       0.0);       (    213.4,     221.0,       0.0,       0.0);
(    198.1,     221.0,       0.0,       0.0);       (    182.9,     221.0,       0.0,       0.0);
(    167.6,     221.0,       0.0,       0.0);       (    152.4,     221.0,       0.0,       0.0);
(    137.2,     221.0,       0.0,       0.0);       (    121.9,     221.0,       0.0,       0.0);
(    106.7,     221.0,       0.0,       0.0);       (     91.4,     221.0,       0.0,       0.0);
(     76.2,     221.0,       0.0,       0.0);       (     61.0,     221.0,       0.0,       0.0);
(     45.7,     221.0,       0.0,       0.0);       (     30.5,     221.0,       0.0,       0.0);
(     15.2,     221.0,       0.0,       0.0);       (      0.0,     221.0,       0.0,       0.0);
(      0.0,     213.4,       0.0,       0.0);       (      0.0,     198.1,       0.0,       0.0);
(      0.0,     182.9,       0.0,       0.0);       (      0.0,     167.6,       0.0,       0.0);
(      0.0,     152.4,       0.0,       0.0);       (      0.0,     137.2,       0.0,       0.0);
(      0.0,     121.9,       0.0,       0.0);       (      0.0,     106.7,       0.0,       0.0);
(      0.0,      91.4,       0.0,       0.0);       (      0.0,      76.2,       0.0,       0.0);
(      0.0,      61.0,       0.0,       0.0);       (      0.0,      45.7,       0.0,       0.0);
(      0.0,      30.5,       0.0,       0.0);       (      0.0,      15.2,       0.0,       0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	6.33336 (86031408)	6.76162 (86112616)	7.66016 (86121116)	7.91357 (86121116)	7.54580 (86121116)
20.0	6.39179 (86121116)	8.65176 (86121116)	7.46569 (86121116)	5.38916 (86121116)	4.48178 (86020516)
30.0	7.84088 (86121116)	7.38353 (86072916)	5.89572 (86072916)	5.02122 (86072916)	4.35668 (86072916)
40.0	5.08329 (86072916)	5.91589 (86032016)	4.99337 (86072816)	5.36780 (86030416)	5.69780 (86030416)
50.0	6.92008 (86072916)	6.16346 (86030416)	6.35828 (86030416)	5.28299 (86073016)	5.40238 (86112016)
60.0	4.20278 (86042116)	5.81550 (86073016)	6.58141 (86112016)	5.41368 (86112016)	5.35571 (86011908)
70.0	3.94782 (86022716)	5.70434 (86022716)	5.94647 (86011916)	6.23382 (86011916)	5.96648 (86011916)
80.0	4.86225 (86022716)	6.95026 (86042124)	6.71477 (86042124)	5.08456 (86042124)	4.21840 (86012716)
90.0	2.05993 (86012724)	3.57747 (86042216)	4.81932 (86041616)	5.06505 (86041616)	4.76554 (86041616)
100.0	2.93380 (86012724)	3.78651 (86012724)	4.23852 (86042916)	4.31771 (86042916)	3.88933 (86042916)
110.0	4.03397 (86012724)	4.58734 (86012724)	7.18977 (86042916)	8.27395 (86042916)	8.12684 (86042916)
120.0	3.61418 (86042616)	6.31072 (86042616)	6.36096 (86042616)	5.73893 (86052216)	5.62929 (86012816)
130.0	3.68497 (86012808)	6.03652 (86042616)	6.73500 (86042616)	6.19360 (86042616)	5.48900 (86012816)
140.0	4.04758 (86011116)	5.58441 (86042316)	5.68490 (86032116)	5.86661 (86032116)	5.56323 (86032116)
150.0	7.72607 (86032216)	5.79769 (86101616)	7.95896 (86101616)	8.90105 (86101616)	8.80594 (86101616)
160.0	6.77050 (86032216)	7.68117 (86032216)	5.10107 (86120524)	5.12627 (86101616)	5.19549 (86101616)
170.0	6.34037 (86032216)	7.91860 (86032216)	7.80973 (86032216)	7.49693 (86120524)	7.10181 (86120524)
180.0	6.60073 (86111324)	6.64916 (86111324)	6.44973 (86111324)	5.94517 (86032216)	5.96305 (86032216)
190.0	4.94420 (86010816)	5.56751 (86111324)	5.62489 (86111324)	5.80200 (86111324)	5.80370 (86111324)
200.0	7.07501 (86010824)	6.37673 (86010816)	5.47225 (86120416)	5.65629 (86120416)	5.38590 (86120416)
210.0	7.82561 (86010824)	7.67508 (86010816)	7.72402 (86010816)	7.21427 (86010816)	6.42797 (86010816)
220.0	8.72653 (86101916)	8.54446 (86101916)	7.18308 (86101916)	6.85930 (86010824)	6.40032 (86010824)
230.0	6.31141 (86111416)	7.64452 (86111416)	7.01189 (86111416)	6.59774 (86101916)	6.39589 (86101916)
240.0	5.70794 (86091716)	6.25714 (86091716)	6.03105 (86091716)	5.59181 (86111416)	6.19529 (86111416)
250.0	4.55977 (86091516)	5.83918 (86091516)	6.10009 (86091516)	5.83188 (86091516)	5.35325 (86091516)
260.0	3.85691 (86050516)	4.58915 (86050516)	4.77193 (86050516)	4.71113 (86050516)	4.48906 (86050516)
270.0	4.41009 (86050516)	5.60657 (86050516)	6.03199 (86050516)	6.05408 (86051516)	6.03718 (86051516)
280.0	4.15417 (86050516)	4.64730 (86051516)	5.45367 (86040416)	5.88756 (86040416)	5.99464 (86040416)
290.0	3.27922 (86070716)	4.20643 (86062316)	4.97190 (86062316)	5.27939 (86062316)	5.27686 (86062316)
300.0	4.89232 (86040616)	5.52790 (86040616)	6.13990 (86030924)	6.80147 (86030924)	7.01240 (86030924)
310.0	9.26474 (86030916)	10.08131 (86030916)	9.67449 (86030916)	8.79414 (86030916)	7.75696 (86030916)
320.0	7.38081 (86030916)	6.91135 (86112516)	7.58745 (86112516)	7.10072 (86112516)	6.23660 (86112516)
330.0	4.83423 (86052816)	5.59240 (86081116)	5.69159 (86081116)	5.93715 (86031308)	5.94433 (86031308)
340.0	9.36610 (86031316)	8.15750 (86031316)	7.71400 (86031216)	8.38481 (86031216)	8.26475 (86031216)
350.0	8.75530 (86031316)	8.93921 (86031216)	9.58816 (86031216)	8.67473 (86031216)	7.34144 (86031216)
360.0	5.65442 (86031216)	6.45982 (86072908)	7.11412 (86072908)	7.80952 (86112616)	7.91442 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	6.81836 (86121116)	5.98835 (86121116)	5.20004 (86121116)	4.50904 (86121116)	4.11084 (86073008)
20.0	4.08985 (86111716)	3.78123 (86111716)	3.99265 (86031108)	4.10160 (86031108)	4.09043 (86031108)
30.0	3.86805 (86072824)	3.84299 (86072824)	3.81548 (86021116)	3.70578 (86021116)	3.53830 (86021116)
40.0	5.60320 (86030416)	5.24542 (86030416)	4.77491 (86030416)	4.28453 (86030416)	3.82061 (86030416)
50.0	5.47623 (86112016)	5.31166 (86112016)	5.00586 (86112016)	4.63621 (86112016)	4.25181 (86112016)
60.0	5.04784 (86011908)	4.55064 (86011908)	4.02476 (86011908)	3.90518 (86031116)	3.80397 (86031116)
70.0	5.57782 (86011916)	5.15022 (86011916)	4.72845 (86011916)	4.33155 (86011916)	4.25878 (86042124)
80.0	3.87545 (86012716)	3.53042 (86012716)	3.20035 (86012716)	2.89567 (86012716)	2.66158 (86021916)
90.0	4.30276 (86041616)	3.81720 (86041616)	3.59021 (86012016)	3.34752 (86012016)	3.09984 (86012016)
100.0	3.39533 (86021516)	3.08548 (86021516)	2.77184 (86021516)	2.48028 (86021516)	2.22754 (86120316)
110.0	7.45732 (86042916)	6.64703 (86042916)	5.85630 (86042916)	5.14408 (86042916)	4.52448 (86042916)
120.0	5.29174 (86012816)	4.86573 (86012816)	4.53933 (86011316)	4.27494 (86011316)	3.99244 (86011316)
130.0	5.40482 (86012816)	5.08500 (86012816)	4.67143 (86012816)	4.24104 (86012816)	3.83060 (86012816)
140.0	5.05770 (86032116)	4.51206 (86032116)	4.05097 (86120316)	3.79077 (86120316)	3.53012 (86120316)
150.0	8.11598 (86101616)	7.19936 (86101616)	6.26564 (86101616)	5.41318 (86101616)	4.67198 (86101616)
160.0	5.06109 (86101616)	4.82143 (86101616)	4.93316 (86101608)	5.19282 (86101608)	5.31214 (86101608)
170.0	6.44210 (86120524)	5.73664 (86120524)	5.06393 (86120524)	4.90047 (86012408)	4.93152 (86012408)
180.0	5.73363 (86032216)	5.36686 (86032216)	5.03569 (86120524)	4.89875 (86120524)	4.69560 (86120524)
190.0	5.55175 (86111324)	5.13474 (86111324)	4.65299 (86111324)	4.17176 (86111324)	3.72408 (86111324)
200.0	4.93161 (86120416)	4.43112 (86120416)	3.95048 (86120416)	3.52037 (86102816)	3.28118 (86102816)
210.0	5.58447 (86010816)	5.08917 (86101908)	4.78680 (86101908)	4.43771 (86101908)	4.08580 (86101908)
220.0	5.82649 (86010824)	5.25033 (86010824)	4.71833 (86010824)	4.48139 (86010816)	4.25585 (86010816)
230.0	6.02167 (86101916)	5.58271 (86101916)	5.13581 (86101916)	4.70876 (86101916)	4.31362 (86101916)
240.0	6.44399 (86111416)	6.45216 (86111416)	6.30879 (86111416)	6.07632 (86111416)	5.79630 (86111416)
250.0	4.82196 (86091516)	4.30898 (86091516)	3.84268 (86091516)	3.55726 (86032616)	3.31760 (86032616)
260.0	4.19833 (86050516)	3.88863 (86050516)	3.58513 (86050516)	3.29963 (86050516)	3.03684 (86050516)
270.0	5.82078 (86051516)	5.50325 (86051516)	5.14475 (86051516)	4.77984 (86051516)	4.42716 (86051516)
280.0	5.89567 (86040416)	5.67022 (86040416)	5.37428 (86040416)	5.04600 (86040416)	4.71004 (86040416)
290.0	5.09295 (86062316)	4.81453 (86062316)	4.49468 (86062316)	4.16563 (86062316)	3.84548 (86062316)
300.0	6.92028 (86030924)	6.64756 (86030924)	6.27729 (86030924)	5.86446 (86030924)	5.44329 (86030924)
310.0	6.74994 (86030916)	5.84856 (86030916)	5.27344 (86122316)	4.92375 (86122316)	4.56991 (86122316)
320.0	5.34979 (86112516)	4.56021 (86112516)	3.89272 (86112516)	3.34021 (86112516)	2.88516 (86112516)
330.0	5.70578 (86031308)	5.37063 (86031308)	5.01097 (86031308)	4.65960 (86031308)	4.33023 (86031308)
340.0	7.77530 (86031216)	7.14882 (86031216)	6.49897 (86031216)	5.87828 (86031216)	5.30852 (86031216)
350.0	6.09473 (86031216)	5.40037 (86072908)	5.07061 (86072908)	4.84588 (86072908)	4.64452 (86072908)
360.0	7.64318 (86112616)	7.17266 (86112616)	6.61966 (86112616)	6.05190 (86112616)	5.50584 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	3.74368 (86073008)	3.69700 (86042108)	3.65485 (86042108)	3.61791 (86042108)	3.54444 (86042108)
20.0	4.00412 (86031108)	3.87513 (86031108)	3.72479 (86031108)	3.56630 (86031108)	3.40744 (86031108)
30.0	3.34261 (86021116)	3.22103c(86121124)	3.25022c(86121124)	3.23927c(86121124)	3.20055c(86121124)
40.0	3.40181 (86030416)	3.03257 (86030416)	2.89088 (86111908)	2.80039 (86111908)	2.69797 (86111908)
50.0	3.87989 (86112016)	3.53371 (86112016)	3.21837 (86112016)	2.93458 (86112016)	2.88694 (86122008)
60.0	3.65865 (86031116)	3.48897 (86031116)	3.30836 (86031116)	3.12566 (86031116)	2.94647 (86031116)
70.0	4.38077 (86042124)	4.44171 (86042124)	4.45007 (86042124)	4.41913 (86042124)	4.34328 (86042124)
80.0	2.52085 (86021916)	2.37487 (86021916)	2.23037 (86021916)	2.09527 (86021916)	1.96442 (86021916)
90.0	2.86120 (86012016)	2.63817 (86012016)	2.43320 (86012016)	2.25516 (86012016)	2.09516c(86071908)
100.0	2.23076 (86090616)	2.21300 (86090616)	2.17192 (86090616)	2.11466 (86090616)	2.04684 (86090616)
110.0	3.99341 (86042916)	3.54049 (86042916)	3.15421 (86042916)	2.82389 (86042916)	2.55682 (86030724)
120.0	3.71122 (86011316)	3.44188 (86011316)	3.18968 (86011316)	2.96072 (86011316)	2.74797 (86011316)
130.0	3.45514 (86012816)	3.11887 (86012816)	3.17187 (86102624)	3.32946 (86102624)	3.44609 (86102624)
140.0	3.28433 (86120316)	3.05960 (86120316)	2.85721 (86120316)	2.67609 (86120316)	2.51421 (86120316)
150.0	4.04204 (86101616)	3.51181 (86101616)	3.22039 (86032108)	2.97537 (86032108)	2.75324 (86032108)
160.0	5.32413 (86101608)	5.25757 (86101608)	5.13589 (86101608)	4.97737 (86101608)	4.79583 (86101608)
170.0	4.83488 (86012408)	4.65531 (86012408)	4.42726 (86012408)	4.17527 (86012408)	3.91590 (86012408)
180.0	4.45718 (86120524)	4.20455 (86120524)	3.95417 (86120524)	3.71004 (86120524)	3.49129 (86120524)
190.0	3.58844 (86101924)	3.54509 (86101924)	3.47299 (86101924)	3.38033 (86101924)	3.29296 (86101924)
200.0	3.02854 (86102816)	2.78043 (86102816)	2.81020 (86102824)	2.91873 (86102824)	2.99151 (86102824)
210.0	3.75215 (86101908)	3.44533 (86101908)	3.16748 (86101908)	2.91770 (86101908)	2.69160 (86101908)
220.0	4.02662 (86010816)	3.80095 (86010816)	3.58327 (86010816)	3.38002 (86010816)	3.20725 (86010816)
230.0	4.15571 (86050924)	4.00273 (86050924)	3.83604 (86050924)	3.66510 (86050924)	3.52382 (86050924)
240.0	5.49553 (86111416)	5.19077 (86111416)	4.89220 (86111416)	4.63172 (86111416)	4.40703 (86111416)
250.0	3.08762 (86032616)	2.92651 (86092124)	2.82994 (86092124)	2.73084 (86092124)	2.61670 (86092124)
260.0	2.84924 (86122308)	2.79724 (86122308)	2.72534 (86122308)	2.64052 (86122308)	2.54791 (86122308)
270.0	4.09593 (86051516)	3.85593 (86031008)	3.80863 (86031008)	3.73953 (86031008)	3.65499 (86031008)
280.0	4.38141 (86040416)	4.06866 (86040416)	3.77608 (86040416)	3.50822 (86040416)	3.25997 (86040416)
290.0	3.54357 (86062316)	3.26406 (86062316)	3.00815 (86062316)	2.77538 (86062316)	2.56444 (86062316)
300.0	5.03388 (86030924)	4.64704 (86030924)	4.28788 (86030924)	3.95799 (86030924)	3.67314 (86030924)
310.0	4.22704 (86122316)	3.90351 (86122316)	3.60328 (86122316)	3.49738 (86031908)	3.44476 (86031908)
320.0	2.72206 (86080724)	2.68281 (86031908)	2.65692 (86031908)	2.61061 (86031908)	2.55239 (86031908)
330.0	4.02750 (86031308)	3.75180 (86031308)	3.50167 (86031308)	3.27492 (86031308)	3.06922 (86031308)
340.0	4.79620 (86031216)	4.56739 (86080308)	4.50283 (86080308)	4.41401 (86080308)	4.29903 (86080308)
350.0	4.66016 (86020508)	4.59043 (86020508)	4.51353 (86020508)	4.44659 (86020508)	4.36245 (86020508)
360.0	4.99904 (86112616)	4.53819 (86112616)	4.12405 (86112616)	3.75433 (86112616)	3.43264 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	3.44064 (86042108)	3.37511 (86042108)	3.28007 (86042108)
20.0	3.25257 (86031108)	3.07654 (86031108)	2.94327 (86031108)
30.0	3.16484c(86121124)	3.05088c(86121124)	2.96977c(86121124)
40.0	2.58904 (86111908)	2.46097 (86111908)	2.38729 (86021508)
50.0	2.86078 (86122008)	2.81928 (86122008)	2.78289 (86122008)
60.0	2.77415 (86031116)	2.66006 (86111808)	2.56023 (86111808)
70.0	4.27161 (86042124)	4.18939 (86042124)	4.05552 (86042124)
80.0	1.89701 (86090308)	1.98353 (86090308)	2.05734 (86090308)
90.0	2.20250c(86071908)	2.28852c(86071908)	2.35542c(86071908)
100.0	1.97270 (86090616)	1.89536 (86090616)	1.81691 (86090616)
110.0	2.53378 (86030724)	2.49853 (86030724)	2.43695 (86030724)
120.0	2.56038 (86022016)	2.51997 (86060608)	2.59802 (86060608)
130.0	3.52669 (86102624)	3.57625 (86102624)	3.59485 (86102624)
140.0	2.36928 (86120316)	2.23913 (86120316)	2.12181 (86120316)
150.0	2.56070 (86032108)	2.41180 (86032108)	2.25174 (86032108)
160.0	4.63781 (86111508)	4.51343 (86111508)	4.37062 (86111508)
170.0	3.65976 (86012408)	3.41330 (86012408)	3.18321 (86012408)
180.0	3.32150 (86110216)	3.21478 (86110216)	3.10148 (86110216)
190.0	3.19226 (86101924)	3.08830 (86101924)	2.98115 (86101924)
200.0	3.01794 (86102824)	3.03255 (86102824)	3.01304 (86102824)
210.0	2.50909 (86101908)	2.34643 (86101908)	2.18661 (86101908)
220.0	3.08729 (86010816)	2.91565 (86010816)	2.76279 (86010816)
230.0	3.37742 (86050924)	3.21736 (86050924)	3.06698 (86050924)
240.0	4.15122 (86111416)	3.92448 (86111416)	3.71234 (86111416)
250.0	2.52400 (86092124)	2.42564 (86092124)	2.32929 (86092124)
260.0	2.45134 (86122308)	2.35411 (86122308)	2.25924 (86122308)
270.0	3.55990 (86031008)	3.45740 (86031008)	3.35005 (86031008)
280.0	3.12850 (86040324)	3.07927 (86040324)	3.01459 (86040324)
290.0	2.45499 (86031824)	2.37884 (86031824)	2.30147 (86031824)
300.0	3.40867 (86030924)	3.16916 (86030924)	2.95163 (86030924)
310.0	3.36216 (86031908)	3.28199 (86031908)	3.20541 (86031908)
320.0	2.45666 (86031908)	2.37578 (86031908)	2.30901 (86031908)
330.0	2.89573 (86031308)	2.75025 (86031308)	2.59584 (86031308)
340.0	4.18521 (86080308)	4.07684 (86080308)	3.96437 (86080308)
350.0	4.28862 (86020508)	4.20089 (86020508)	4.09902 (86020508)
360.0	3.15631 (86112616)	2.95774 (86082024)	2.87431 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	7.44777	(86101916)	15.24	0.00	8.67478	(86101916)
30.48	0.00	9.13811	(86101916)	45.72	0.00	8.63417	(86101916)
60.96	0.00	7.54574	(86010824)	76.20	0.00	7.07240	(86010824)
91.44	0.00	5.27667	(86010816)	106.68	0.00	6.61192	(86111324)
121.92	0.00	5.80155	(86101924)	137.16	0.00	6.21853	(86032216)
152.40	0.00	5.17410	(86111324)	167.64	0.00	6.69175	(86032216)
182.88	0.00	6.61316	(86032216)	198.12	0.00	3.56403	(86032108)
213.36	0.00	6.41019	(86011116)	213.36	15.24	5.36888	(86011116)
213.36	30.48	2.64387	(86012808)	213.36	45.72	2.88298	(86022516)
213.36	60.96	3.07436	(86012724)	213.36	76.20	4.04848	(86012724)
213.36	91.44	1.94396	(86012724)	213.36	106.68	2.01510	(86012724)
213.36	121.92	1.54950	(86012724)	213.36	137.16	2.55566	(86022716)
213.36	152.40	3.13404	(86022716)	213.36	167.64	4.08114	(86042116)
213.36	182.88	5.91349	(86072916)	213.36	198.12	7.06973	(86072916)
213.36	213.36	6.10039	(86032016)	213.36	220.98	6.02087	(86032016)
198.12	220.98	5.47764	(86072916)	182.88	220.98	7.53727	(86121116)
167.64	220.98	4.83403	(86121116)	152.40	220.98	5.62534	(86121116)
137.16	220.98	4.93818	(86031916)	121.92	220.98	5.36993	(86031316)
106.68	220.98	7.32058	(86031316)	91.44	220.98	8.07487	(86031316)
76.20	220.98	9.18502	(86031316)	60.96	220.98	7.51078	(86031316)
45.72	220.98	4.78963	(86031016)	30.48	220.98	5.53281	(86031816)
15.24	220.98	7.46001	(86030916)	0.00	220.98	9.77315	(86030916)
0.00	213.36	10.06358	(86030916)	0.00	198.12	8.40142	(86030916)
0.00	182.88	5.06571	(86030916)	0.00	167.64	3.80418	(86040616)
0.00	152.40	2.86234	(86051516)	0.00	137.16	3.20449	(86050516)
0.00	121.92	2.96044	(86040516)	0.00	106.68	2.90490	(86050516)
0.00	91.44	2.64634	(86050516)	0.00	76.20	2.85776	(86051016)
0.00	60.96	3.95864	(86091516)	0.00	45.72	5.05704	(86091716)
0.00	30.48	5.45899	(86091716)	0.00	15.24	6.69880	(86111416)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF 111_8 IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	10.08131	ON 86030916: AT (	-46.53,	239.20,	0.00,	0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

********* FATAL ERROR MESSAGES *********
*** NONE ***

********* WARNING MESSAGES *********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX J

ISCST2 OUTPUT LISTING

1,1,1-TRICHLOROETHANE 24-HOUR AVERGAGE EMISSSION

RUN: FMX11124

```
                    ISCST2 - (DATED 93109)

                    IBM-PC VERSION (2.11 ) ISCST2F
                    (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                    SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  2/29/1996 at  9:21:53


*** TRINITY SOURCE FILE NAME: C:\PROJECT\26005\MODELDAT\FMXSRCA.PNT
*** TRINITY DOWNWASH FILE NAME: C:\PROJECT\26005\MODELDAT\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: C:\PROJECT\26005\MODELDAT\FMXREC.REC
CO STARTING
CO TITLEONE Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3)
CO TITLETWO 1,1,1-Trichloroethane 24-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 24
CO POLLUTID 111_24
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION EXFAN_7 POINT     108.51     152.71       0.00
SO SRCPARAM EXFAN_7 0.104998      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64       0.00
SO SRCPARAM EXFAN_12 0.104998      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_19 POINT     182.88     102.56       0.00
SO SRCPARAM EXFAN_19 0.104998      16.15     299.82    24.6109      1.105
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_7     15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7    150.26    148.19    141.62    130.75    115.90     97.54
SO BUILDWID EXFAN_7    116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID EXFAN_7    146.50    135.51    120.40    129.50    140.77    147.76
SO BUILDWID EXFAN_7     95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     12.19
SO BUILDHGT EXFAN_12     12.19     12.19     12.19     12.19     12.19     15.24
SO BUILDHGT EXFAN_12     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64    103.63    114.23     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID EXFAN_12     80.42     88.29     93.48     95.83     95.26     39.09
SO BUILDWID EXFAN_12     39.97     39.64     38.10     39.64     39.97     91.81
SO BUILDWID EXFAN_12     95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT EXFAN_19     15.24     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT EXFAN_19     12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDWID EXFAN_19     80.42     88.29     93.48     95.83     95.26     91.81
```

```
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID EXFAN_19    80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID EXFAN_19    85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID EXFAN_19    37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
```

```
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 24 FIRST
OU FINISHED

************************************
*** SETUP Finishes Successfully ***
************************************
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 24-HR

**This Run Includes: 3 Source(s); 1 Source Group(s); and 706 Receptor(s)

**The Model Assumes A Pollutant Type of: 111_24

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Input Runstream File: C:\PROJECT\26005\MODELDAT\FMX11124.DAT ; **Output Print File: C:\PROJECT\26005\MODELDAT\FMX11124.LST

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EXFAN_7	0	0.10500E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.10500E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.10500E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

10/2

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	EXFAN_7 , EXFAN_12, EXFAN_19,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(      0.0,      0.0,      0.0,      0.0);     (     15.2,      0.0,      0.0,      0.0);
(     30.5,      0.0,      0.0,      0.0);     (     45.7,      0.0,      0.0,      0.0);
(     61.0,      0.0,      0.0,      0.0);     (     76.2,      0.0,      0.0,      0.0);
(     91.4,      0.0,      0.0,      0.0);     (    106.7,      0.0,      0.0,      0.0);
(    121.9,      0.0,      0.0,      0.0);     (    137.2,      0.0,      0.0,      0.0);
(    152.4,      0.0,      0.0,      0.0);     (    167.6,      0.0,      0.0,      0.0);
(    182.9,      0.0,      0.0,      0.0);     (    198.1,      0.0,      0.0,      0.0);
(    213.4,      0.0,      0.0,      0.0);     (    213.4,     15.2,      0.0,      0.0);
(    213.4,     30.5,      0.0,      0.0);     (    213.4,     45.7,      0.0,      0.0);
(    213.4,     61.0,      0.0,      0.0);     (    213.4,     76.2,      0.0,      0.0);
(    213.4,     91.4,      0.0,      0.0);     (    213.4,    106.7,      0.0,      0.0);
(    213.4,    121.9,      0.0,      0.0);     (    213.4,    137.2,      0.0,      0.0);
(    213.4,    152.4,      0.0,      0.0);     (    213.4,    167.6,      0.0,      0.0);
(    213.4,    182.9,      0.0,      0.0);     (    213.4,    198.1,      0.0,      0.0);
(    213.4,    213.4,      0.0,      0.0);     (    213.4,    221.0,      0.0,      0.0);
(    198.1,    221.0,      0.0,      0.0);     (    182.9,    221.0,      0.0,      0.0);
(    167.6,    221.0,      0.0,      0.0);     (    152.4,    221.0,      0.0,      0.0);
(    137.2,    221.0,      0.0,      0.0);     (    121.9,    221.0,      0.0,      0.0);
(    106.7,    221.0,      0.0,      0.0);     (     91.4,    221.0,      0.0,      0.0);
(     76.2,    221.0,      0.0,      0.0);     (     61.0,    221.0,      0.0,      0.0);
(     45.7,    221.0,      0.0,      0.0);     (     30.5,    221.0,      0.0,      0.0);
(     15.2,    221.0,      0.0,      0.0);     (      0.0,    221.0,      0.0,      0.0);
(      0.0,    213.4,      0.0,      0.0);     (      0.0,    198.1,      0.0,      0.0);
(      0.0,    182.9,      0.0,      0.0);     (      0.0,    167.6,      0.0,      0.0);
(      0.0,    152.4,      0.0,      0.0);     (      0.0,    137.2,      0.0,      0.0);
(      0.0,    121.9,      0.0,      0.0);     (      0.0,    106.7,      0.0,      0.0);
(      0.0,     91.4,      0.0,      0.0);     (      0.0,     76.2,      0.0,      0.0);
(      0.0,     61.0,      0.0,      0.0);     (      0.0,     45.7,      0.0,      0.0);
(      0.0,     30.5,      0.0,      0.0);     (      0.0,     15.2,      0.0,      0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\PROJECT\26005\MODELDAT\ORLPRE86.BIN   FORMAT: UNFORM
SURFACE STATION NO.: 12815   UPPER AIR STATION NO.: 12842
NAME: ORLANDO   NAME: TAMPA
YEAR: 1986   YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	2.89299 (86031924)	3.36087c(86121124)	3.60735c(86121124)	3.54534c(86121124)	3.32268c(86121124)
20.0	3.27785 (86072924)	3.65407c(86121124)	3.03990c(86121124)	2.77615 (86072924)	2.54433 (86072924)
30.0	3.00563c(86121124)	3.74526 (86072924)	2.90190 (86072924)	2.44290 (86011024)	2.36799 (86072824)
40.0	2.35648 (86072924)	3.13840 (86072824)	3.62526 (86072824)	3.60748 (86072824)	3.30754 (86072824)
50.0	2.73307 (86022724)	3.10920 (86072824)	2.89468 (86072824)	2.69484 (86073024)	2.54644 (86073024)
60.0	2.46668 (86022724)	2.79724 (86073024)	2.94221 (86073024)	2.93765 (86011924)	2.99435 (86011924)
70.0	2.52242 (86022724)	3.12919 (86022724)	3.32813 (86011924)	3.17735 (86011924)	2.94134 (86011924)
80.0	2.43478 (86022724)	3.20564 (86011924)	2.84926 (86011924)	2.32223 (86011924)	1.94200 (86011924)
90.0	1.43418 (86012724)	2.00153 (86012724)	2.42670c(86041624)	2.60680c(86041624)	2.54445c(86041624)
100.0	1.45461 (86012724)	2.10144 (86012724)	2.27059 (86012724)	2.21881 (86012724)	2.06127 (86012724)
110.0	1.83895 (86012724)	2.00136 (86011324)	2.93640 (86042924)	3.48795 (86042924)	3.51869 (86042924)
120.0	1.88818c(86012824)	2.13687 (86042624)	2.48451c(86012824)	2.66444c(86012824)	2.57563c(86012824)
130.0	2.21214 (86011124)	3.31817c(86012824)	3.06280c(86012824)	2.87591c(86012824)	2.79545c(86012824)
140.0	3.09202 (86011124)	4.84457 (86011124)	3.65045 (86032124)	3.41351 (86032124)	3.10512 (86032124)
150.0	4.49213 (86011124)	4.64762 (86011124)	5.28586 (86011124)	4.91222 (86011124)	4.02779 (86011124)
160.0	3.52698 (86032224)	3.71627 (86032224)	3.48192 (86120524)	3.16303 (86120524)	2.96059 (86101624)
170.0	2.99533 (86032224)	3.70037 (86032224)	3.97240 (86032224)	4.13859 (86120524)	4.43172 (86120524)
180.0	3.08582c(86111324)	3.00353c(86111324)	2.75464c(86111324)	2.67946 (86032224)	2.71904 (86032224)
190.0	2.97336 (86010824)	3.19686c(86111324)	3.08352c(86111324)	2.96147c(86111324)	2.78913c(86111324)
200.0	4.97494 (86010824)	4.00649 (86010824)	3.13375c(86111324)	2.82954c(86111324)	2.49864c(86111324)
210.0	5.11492 (86010824)	5.49101 (86010824)	5.12358 (86010824)	4.56516 (86010824)	4.00051 (86010824)
220.0	3.51390 (86101924)	3.69151 (86010824)	4.18510 (86010824)	4.32315 (86010824)	4.23804 (86010824)
230.0	2.46233 (86010924)	3.07581 (86010924)	3.41977 (86010924)	3.55720 (86010924)	3.56184 (86010924)
240.0	2.22294 (86091524)	2.28634 (86091524)	2.47182 (86010924)	2.73828 (86010924)	2.88915 (86010924)
250.0	1.80607 (86091524)	2.31516 (86091524)	2.42725 (86091524)	2.33348 (86091524)	2.15806 (86091524)
260.0	1.40606c(86050524)	1.67429 (86051524)	1.84013 (86051524)	1.89275 (86051524)	1.86113 (86051524)
270.0	1.80198c(86050524)	2.38691c(86050524)	2.70394 (86051524)	2.83744 (86051524)	2.81165 (86051524)
280.0	1.87815c(86050524)	2.19062c(86050524)	2.22603 (86040424)	2.35832 (86040424)	2.36761 (86040424)
290.0	1.84424c(86050524)	1.89267c(86050524)	2.01978 (86062324)	2.13020 (86062324)	2.12216 (86062324)
300.0	2.34871 (86030924)	3.34657 (86030924)	3.92025 (86030924)	4.17817 (86030924)	4.18741 (86030924)
310.0	4.16584 (86030924)	4.32743 (86030924)	4.04547 (86030924)	3.67730 (86030924)	3.54425 (86122324)
320.0	2.68394 (86030924)	2.75101 (86031824)	2.76987 (86081124)	2.56252 (86081124)	2.26608 (86081124)
330.0	3.31438 (86031324)	4.69773 (86031324)	5.28969 (86031324)	5.37913 (86031324)	5.21192 (86031324)
340.0	6.68763 (86031324)	6.70041 (86031324)	6.06013 (86031324)	5.25866 (86031324)	4.47695 (86031324)
350.0	6.08180 (86031324)	5.04519 (86031324)	3.80743 (86031324)	3.46757 (86031224)	3.05748 (86080324)
360.0	3.72978 (86031324)	3.13796 (86031924)	3.08701 (86031924)	2.85230 (86112624)	2.83472 (86112624)

*** ISCST2 - VERSION 93109 *** *** Foamex;125' Foam Line & LBSR Stacks(GEP);53' Exhaust Fan Stacks (3) *** 02/29/96
*** 1,1,1-Trichloroethane 24-hr Average Emissions *** 09:21:54
PAGE 11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	3.19723 (86082024)	3.15144 (86082024)	3.02072 (86082024)	2.85137 (86082024)	2.66841 (86082024)
20.0	2.26090 (86072924)	2.22303 (86011024)	2.21446 (86011024)	2.16178 (86011024)	2.07975 (86011024)
30.0	2.39112 (86072824)	2.30467 (86072824)	2.16980 (86072824)	2.08515 (86021124)	1.97820 (86021124)
40.0	2.87827 (86072824)	2.45971 (86072824)	2.09841 (86072824)	1.89118 (86021024)	1.83883 (86021024)
50.0	2.33786 (86073024)	2.16870 (86112024)	2.13948 (86112024)	2.07933 (86112024)	2.00131 (86112024)
60.0	2.88880 (86011924)	2.69804 (86011924)	2.48054 (86011924)	2.26494 (86011924)	2.06355 (86011924)
70.0	2.70811 (86011924)	2.48139 (86011924)	2.26926 (86011924)	2.07484 (86011924)	1.92915c(86081824)
80.0	1.75002c(86041624)	1.56564c(86041624)	1.42247 (86021924)	1.36176 (86021924)	1.28902 (86021924)
90.0	2.40381c(86041624)	2.23466c(86041624)	2.06195c(86041624)	1.90245c(86041624)	1.76204c(86041624)
100.0	1.88783 (86012724)	1.71274 (86012724)	1.55145 (86012724)	1.40945 (86012724)	1.28731 (86012724)
110.0	3.30341 (86042924)	3.00959 (86042924)	2.70608 (86042924)	2.42590 (86042924)	2.18133 (86042924)
120.0	2.38138c(86012824)	2.15940c(86012824)	1.94530c(86012824)	1.84759 (86011324)	1.80011 (86011324)
130.0	2.66098c(86012824)	2.48991c(86012824)	2.31005c(86012824)	2.12431c(86012824)	1.94147c(86012824)
140.0	2.81305 (86032124)	2.54907 (86032124)	2.31231 (86032124)	2.10062 (86032124)	1.91177 (86032124)
150.0	3.50861 (86101624)	3.15688 (86101624)	2.76687 (86101624)	2.39699 (86101624)	2.06930 (86101624)
160.0	3.15609 (86101624)	3.26795 (86101624)	3.31013 (86101624)	3.30203 (86101624)	3.25387 (86101624)
170.0	4.49958 (86120524)	4.41271 (86120524)	4.22683 (86120524)	3.98533 (86120524)	3.71919 (86120524)
180.0	2.65957 (86032224)	2.64815 (86120524)	2.72698 (86120524)	2.74440 (86120524)	2.71342 (86120524)
190.0	2.55579c(86111324)	2.29293c(86111324)	2.03250c(86111324)	1.79244c(86111324)	1.72145 (86120624)
200.0	2.20796c(86111324)	2.03954 (86102824)	2.10133 (86102824)	2.12263 (86102824)	2.11635 (86102824)
210.0	3.49314 (86010824)	3.05748 (86010824)	2.68953 (86010824)	2.37984 (86010824)	2.11850 (86010824)
220.0	4.03956 (86010824)	3.79271 (86010824)	3.53260 (86010824)	3.27721 (86010824)	3.03525 (86010824)
230.0	3.48301 (86010924)	3.35613 (86010924)	3.20363 (86010924)	3.03956 (86010924)	2.87266 (86010924)
240.0	2.95187 (86010924)	2.94695 (86010924)	2.89328 (86010924)	2.80668 (86010924)	2.69950 (86010924)
250.0	1.96332 (86091524)	1.83862 (86032624)	1.76384 (86092024)	1.73539 (86092024)	1.69524 (86092024)
260.0	1.78340 (86051524)	1.68246 (86051524)	1.57260 (86051524)	1.46214 (86051524)	1.35572 (86051524)
270.0	2.69892 (86051524)	2.54388 (86051524)	2.37320 (86051524)	2.20197 (86051524)	2.03818 (86051524)
280.0	2.32298 (86040424)	2.24777 (86040424)	2.14674 (86040424)	2.03291 (86040424)	1.91432 (86040424)
290.0	2.05024 (86062324)	1.94936 (86062324)	1.83948 (86062324)	1.73177 (86062324)	1.63177 (86062324)
300.0	4.04711 (86030924)	3.82828 (86030924)	3.57483 (86030924)	3.31308 (86030924)	3.05791 (86030924)
310.0	3.59587 (86122324)	3.52498 (86122324)	3.37870 (86122324)	3.19219 (86122324)	2.98894 (86122324)
320.0	1.97660 (86081124)	1.75787 (86031324)	1.67515 (86031324)	1.58213 (86031324)	1.48581 (86031324)
330.0	4.92795 (86031324)	4.60319 (86031324)	4.27461 (86031324)	3.95963 (86031324)	3.66581 (86031324)
340.0	3.79727 (86031324)	3.23355 (86031324)	2.77227 (86031324)	2.41513 (86031224)	2.19221 (86031224)
350.0	2.85710 (86080324)	2.56227 (86080324)	2.35478 (86113024)	2.41548 (86113024)	2.41611 (86113024)
360.0	2.72036 (86112624)	2.56161 (86112624)	2.38613 (86112624)	2.25262c(86121124)	2.33088 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	2.48507 (86082024)	2.30837 (86082024)	2.14191 (86082024)	1.98736 (86082024)	1.84523 (86082024)
20.0	1.98075 (86011024)	1.87378 (86011024)	1.76493 (86011024)	1.65804 (86011024)	1.55679 (86011024)
30.0	1.85510 (86021124)	1.72750 (86021124)	1.60251 (86021124)	1.48238 (86021124)	1.37363 (86021124)
40.0	1.76952 (86021024)	1.69079 (86021024)	1.60787 (86021024)	1.52428 (86021024)	1.44271 (86021024)
50.0	1.91391 (86112024)	1.82259 (86112024)	1.73039 (86112024)	1.63954 (86112024)	1.55060 (86112024)
60.0	1.88063 (86011924)	1.71675 (86011924)	1.57082 (86011924)	1.47123 (86030424)	1.39069 (86030424)
70.0	1.80711c(86081824)	1.69412c(86081824)	1.60640 (86042124)	1.57929 (86042124)	1.54041 (86042124)
80.0	1.21152 (86021924)	1.13385 (86021924)	1.05870 (86021924)	0.98981 (86021924)	0.92382 (86021924)
90.0	1.63103c(86041624)	1.51050c(86041624)	1.40007c(86041624)	1.36010c(86071924)	1.36057c(86071924)
100.0	1.18332 (86012724)	1.09500 (86012724)	1.02726c(86090624)	1.03324c(86090624)	1.03168c(86090624)
110.0	1.97483 (86042924)	1.80402 (86042924)	1.65473 (86042924)	1.53509 (86042924)	1.43888 (86042924)
120.0	1.74993 (86011324)	1.69836 (86011324)	1.64678 (86011324)	1.59520 (86011324)	1.52812 (86011324)
130.0	1.77181c(86012824)	1.61691c(86012824)	1.47736c(86012824)	1.37175 (86102624)	1.38822 (86102624)
140.0	1.79094 (86122924)	1.74682 (86122924)	1.68990 (86122924)	1.62562 (86122924)	1.55779 (86122924)
150.0	1.86110 (86032124)	1.72388 (86032124)	1.59884 (86032124)	1.48409 (86032124)	1.37939 (86032124)
160.0	3.17509 (86101624)	3.07457 (86101624)	2.95987 (86101624)	2.83716 (86101624)	2.71095 (86101624)
170.0	3.44875 (86120524)	3.18632 (86120524)	2.93890 (86120524)	2.70938 (86120524)	2.49870 (86120524)
180.0	2.64803 (86120524)	2.56013 (86120524)	2.46084 (86120524)	2.35363 (86120524)	2.24870 (86120524)
190.0	1.71451 (86120624)	1.69416 (86120624)	1.66003 (86120624)	1.61144 (86120624)	1.57190 (86120624)
200.0	2.09139 (86102824)	2.05377 (86102824)	2.00760 (86102824)	1.95572 (86102824)	1.90018 (86102824)
210.0	1.89681 (86010824)	1.70758 (86010824)	1.54623 (86010824)	1.40780 (86010724)	1.35930 (86010724)
220.0	2.81046 (86010824)	2.60393 (86010824)	2.41537 (86010824)	2.25150 (86010824)	2.12108 (86010824)
230.0	2.70835 (86010924)	2.54989 (86010924)	2.39912 (86010924)	2.26156 (86010924)	2.13481 (86010924)
240.0	2.58088 (86010924)	2.45729 (86010924)	2.33318 (86010924)	2.21455 (86010924)	2.10999 (86010924)
250.0	1.64735 (86092024)	1.59455 (86092024)	1.53893 (86092024)	1.48128 (86092024)	1.42847 (86092024)
260.0	1.32199 (86110924)	1.32282 (86110924)	1.31375 (86110924)	1.29794 (86110924)	1.27720 (86110924)
270.0	1.88561 (86051524)	1.74551 (86051524)	1.61808 (86051524)	1.50633 (86051524)	1.40303 (86051524)
280.0	1.79619 (86040424)	1.68177 (86040424)	1.57292 (86040424)	1.47183 (86040424)	1.39901c(86040324)
290.0	1.54112 (86062324)	1.45912 (86062324)	1.38536 (86062324)	1.31940 (86062324)	1.26043 (86062324)
300.0	2.81710 (86030924)	2.59415 (86030924)	2.39011 (86030924)	2.20464 (86030924)	2.05182 (86030924)
310.0	2.78355 (86122324)	2.58454 (86122324)	2.39648 (86122324)	2.22149 (86122324)	2.06062 (86122324)
320.0	1.39087 (86031324)	1.29993 (86031324)	1.22284 (86031924)	1.18010 (86031924)	1.14405 (86031924)
330.0	3.39575 (86031324)	3.14947 (86031324)	2.92579 (86031324)	2.73688 (86031324)	2.56734 (86031324)
340.0	2.06043c(86102524)	1.99355c(86102524)	1.91577c(86102524)	1.83187c(86102524)	1.74831c(86102524)
350.0	2.37479 (86113024)	2.29189 (86113024)	2.20203 (86113024)	2.10396 (86113024)	1.99786 (86113024)
360.0	2.37655 (86082024)	2.38620 (86082024)	2.36704 (86082024)	2.32595 (86082024)	2.26946 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	1.71537 (86082024)	1.60823 (86082024)	1.58106 (86072324)
20.0	1.48339 (86072324)	1.42715 (86072324)	1.37751 (86072324)
30.0	1.32513 (86071024)	1.30383 (86071024)	1.28441 (86071024)
40.0	1.37143 (86021024)	1.31136 (86021024)	1.23892 (86021024)
50.0	1.47293 (86112024)	1.40450 (86112024)	1.34705 (86122024)
60.0	1.30999 (86030424)	1.24204 (86030424)	1.17977 (86030424)
70.0	1.50527 (86042124)	1.47057 (86042124)	1.41785 (86042124)
80.0	0.88912 (86012024)	0.87356 (86012024)	0.85413 (86012024)
90.0	1.36161c(86071924)	1.36210c(86071924)	1.36132c(86071924)
100.0	1.02408c(86090624)	1.01170c(86090624)	0.99544c(86090624)
110.0	1.36001 (86042924)	1.29538 (86042924)	1.24197 (86042924)
120.0	1.48260 (86011324)	1.44641 (86011324)	1.39944 (86011324)
130.0	1.39527 (86102624)	1.39421 (86102624)	1.38477 (86102624)
140.0	1.48900 (86122924)	1.41831 (86122924)	1.35606 (86122924)
150.0	1.28686 (86032124)	1.21723 (86032124)	1.13973 (86032124)
160.0	2.58458 (86101624)	2.45268 (86101624)	2.33574 (86101624)
170.0	2.31629 (86120524)	2.16474 (86120524)	2.00940 (86120524)
180.0	2.15185 (86120524)	2.05768 (86120524)	1.95863 (86120524)
190.0	1.51971 (86120624)	1.46585 (86120624)	1.40866 (86120624)
200.0	1.84325 (86102824)	1.78839 (86102824)	1.72442 (86102824)
210.0	1.30770 (86010724)	1.25590 (86010724)	1.19836 (86010724)
220.0	2.00894 (86010824)	1.88090 (86010824)	1.76693 (86010824)
230.0	2.02311 (86010924)	1.91278 (86010924)	1.80756 (86010924)
240.0	2.00493 (86010924)	1.90091 (86010924)	1.80399 (86010924)
250.0	1.37626 (86092024)	1.32135 (86092024)	1.26773 (86092024)
260.0	1.25317 (86110924)	1.22593 (86110924)	1.19607 (86110924)
270.0	1.30996 (86051524)	1.23079 (86051524)	1.19565c(86082524)
280.0	1.36026c(86040324)	1.32504 (86052724)	1.30302 (86052724)
290.0	1.20744 (86062324)	1.15920 (86062324)	1.11456 (86062324)
300.0	1.90424 (86030924)	1.77250 (86030924)	1.65239 (86030924)
310.0	1.91768 (86122324)	1.79392 (86122324)	1.67872 (86122324)
320.0	1.10988c(86042024)	1.08205c(86042024)	1.05436c(86042024)
330.0	2.42716 (86031324)	2.29093 (86031324)	2.15565 (86031324)
340.0	1.66748c(86102524)	1.58608c(86102524)	1.50088c(86102524)
350.0	1.88198 (86113024)	1.78031 (86113024)	1.68607 (86113024)
360.0	2.20395 (86082024)	2.12910 (86082024)	2.05118 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_7 , EXFAN_12, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	3.13212	(86010924)	15.24	0.00	3.50412	(86101924)
30.48	0.00	3.73590	(86101924)	45.72	0.00	4.41256	(86010824)
60.96	0.00	4.75937	(86010824)	76.20	0.00	4.38623	(86010824)
91.44	0.00	3.67090	(86010824)	106.68	0.00	3.00666c	(86111324)
121.92	0.00	2.25420c	(86111324)	137.16	0.00	2.83163	(86032224)
152.40	0.00	2.39516	(86032224)	167.64	0.00	3.04986	(86032224)
182.88	0.00	4.31453	(86011124)	198.12	0.00	2.59430	(86011124)
213.36	0.00	4.49123	(86011124)	213.36	15.24	3.66458	(86011124)
213.36	30.48	1.87672	(86011124)	213.36	45.72	1.19236c	(86012824)
213.36	60.96	1.60049	(86012724)	213.36	76.20	1.77223	(86012724)
213.36	91.44	0.93403	(86012724)	213.36	106.68	1.19200	(86012724)
213.36	121.92	0.81958	(86012724)	213.36	137.16	1.16876	(86022724)
213.36	152.40	1.39701	(86022724)	213.36	167.64	2.25789	(86022724)
213.36	182.88	2.23417	(86072924)	213.36	198.12	2.76747	(86072924)
213.36	213.36	2.61793	(86072924)	213.36	220.98	2.49383	(86072924)
198.12	220.98	2.44865	(86072924)	182.88	220.98	2.89142c	(86121124)
167.64	220.98	2.84732	(86072924)	152.40	220.98	2.43460c	(86121124)
137.16	220.98	2.43291	(86031924)	121.92	220.98	3.38731	(86031324)
106.68	220.98	4.62516	(86031324)	91.44	220.98	5.27816	(86031324)
76.20	220.98	5.78875	(86031324)	60.96	220.98	4.78820	(86031324)
45.72	220.98	2.76253	(86031324)	30.48	220.98	2.19063	(86031824)
15.24	220.98	2.70103	(86030924)	0.00	220.98	3.70727	(86030924)
0.00	213.36	4.01994	(86030924)	0.00	198.12	3.90599	(86030924)
0.00	182.88	2.81430	(86030924)	0.00	167.64	1.48602	(86040624)
0.00	152.40	1.74870c	(86050524)	0.00	137.16	1.38785c	(86050524)
0.00	121.92	1.15044c	(86051724)	0.00	106.68	1.11795c	(86050524)
0.00	91.44	0.96757c	(86050524)	0.00	76.20	0.99570	(86101924)
0.00	60.96	1.58236	(86091524)	0.00	45.72	1.94339	(86091524)
0.00	30.48	1.86725	(86091524)	0.00	15.24	2.59876	(86010924)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	6.70041	ON 86031324: AT (	38.28, 298.58, 0.00, 0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

Florida Department of Environmental Protection

Meeting Sign-In Sheet

Re: FOAMEX INTERNATIONAL INC. ***Date:*** 2/22/96

Name	Representing	Telephone
KAY RYKOWSKI	HARDING LAWSON ASSOCIATES	(407)851-1484
DOUG TERRILL	FOAMEX INTERNATIONAL INC.	407-857-2510
Tom BURGHARDT	FOAMEX International Inc	610-859-3010
Cleve Holladay	FLA D.E.P.	904-488-1344
WILLARD HANKS	FL DEP	904-488-1344
Clar Fancy	FL DEP	904-488-1344
Joe Tessitore	Harding Lawson Associates	407-851-1484

Documents

BEST AVAILABLE COPY

Willard
for file

Harding Lawson Associates

HLA

January 29, 1996

26005.F21.816

Mr. C.H. Fancy, P.E.
Division of Air Resources Management
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Request for Meeting
Foamex, L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

This letter is to confirm that we have a meeting scheduled with you at 1:30 pm on Thursday, February 22 to discuss the status of the Foamex L.P. flexible polyurethane foam manufacturing facility located in Orlando, Florida. This facility is currently under Construction Permit AC48-214902, which was issued from Tallahassee. The permit was issued in February 1995; Willard Hanks was the permitting engineer assigned to the project. I have confirmed that Mr. Hanks' schedule is open on this date; it is my assumption that he will attend the meeting.

Foamex representatives will include Doug Terrill, who is the plant manager of the Orlando facility, and Tom Burkhart from the Foamex corporate office in Pennsylvania.. Both myself and Joe Tessitore of HLA will also attend. Should you have any questions or comments concerning this matter, please do not hesitate to contact Kay Rykowski or Joe Tessitore at (407) 851-1484.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

January 10, 1996

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

Mr. Douglas Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit No. AC 48-214902
Polyurethane Foam Manufacturing Facility

The Department hereby modifies the Specific Conditions related to hours of operation and use of cleanup solvent at your plant in Orlando, Orange County, Florida.

Specific Condition 2.

From:

The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr toluene diisocyanate. Cleanup solvent losses shall not exceed: 2 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

To:

The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr toluene diisocyanate. Cleanup solvent losses shall not exceed: **20** gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

Specific Condition 3.

From:

Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	3	5	52	780
Rebond Process	24	6	52	7488
Foam Fabrication Operations	16	6	52	4992
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

To:

Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	**6**	**7**	52	**2184**
Rebond Process	24	**7**	52	**8760**
Foam Fabrication Operations	**24**	**7**	52	**8760**
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

Specific Condition 4.

From:

For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	lbs/hr	TPY
methylene chloride	1,519.11	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.157

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/		
	toluene diisocyanate	0.37	0.14
II.	Foam Line Stack/methylene chloride	955.8	153.93
III.	Long Bun Storage Room Stack/		
	methylene chloride	557.55	89.79
IV.	Foam Fabric Operations/		
	methylene chloride	5.1	14.41
	1,1,1 trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/		
	toluene diisocyanate	0.0046	0.017
VI	Tank Storage (Tank No. 10)/		
	methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	lbs/hr	TPY
methylene chloride	2,222	261.0
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.375	0.42

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.40
II.	Foam Line Stack/methylene chloride	1,400	153.9
III.	Long Bun Storage Room Stack/ methylene chloride	816.7	89.8
IV.	Foam Fabric Operations/ methylene chloride	5.1	14.4
	1,1,1 trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.017
VI	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

A copy of this letter shall be attached to the referenced air construction permit and shall become a part of that permit.

Sincerely

Howard L. Rhodes

Howard L. Rhodes, Director
Division of Air Resources Management

HLR/ch
Enclosure

cc: L. Kozlov, CD
D. Nester, Orange County
K. Rykowski, HLA

Florida Department of
Environmental Protection

Memorandum

RECEIVED
JAN 12 1996
BUREAU OF
AIR REGULATION

Cleve

TO: Howard L. Rhodes

THROUGH: Clair Fancy CHF
A. A. Linero AAL

FROM: Cleve Holladay CH

DATE: January 10, 1996

SUBJECT: Modification of Permit, Foamex, L.P.

Attached for your approval and signature is a letter that will modify the permit for Foamex's polyurethane manufacturing facility in Orange County. The modification will allow Foamex to increase their maximum operating times for the Slabstock Process, Rebond Process and Foam Fabrication Operations at the facility. This increase in operating hours will result in a slight increase of 0.26 tons per year in toluene diisocyanate emissions. The modification will also allow Foamex to increase the amount isopropyl alcohol for use as a cleanup solvent, which will result in a less than one ton per year increase in VOC emissions. No other increase in facility-wide allowable emissions are requested as a result of this modification. The maximum predicted ground level concentrations of all key toxic pollutants at this facility are below their respective Florida Ambient Reference Concentrations.

No comments were submitted in response to the public notice for the proposed modification.

I recommend your approval and signature.

CHF/ch/t

Attachment

Z 127 633 147

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Douglas Terrell	
Street and No. Toarnex	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 1-16-96 AC48-214902	

PS Form **3800**, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas Terrell, Plant Mgr
Toarnex, LP
1351 Gemini Blvd
Orlando, Fl 32821

4a. Article Number
Z 127 633 147

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
1-18-96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
M Barber 1/18/96

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Harding Lawson Associates

November 7, 1995

26005.F21.816

RECEIVED
NOV 15 1995
BUREAU OF
AIR REGULATION

Mr. C.H. Fancy, P.E.
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Foamex L.P.
Notice of Intent to Issue Permit Amendment
FDEP Permit No. AC48-214902

Dear Mr. Fancy

Please find enclosed your copy of the Proof of Publication for the subject Intent to Issue for our client, Foamex L.P.

Should you have any questions or comments, please do not hesitate to call.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

PKR/slw/foamex1tr

Attachments: As Stated

Engineering and
Environmental Services

4763 South Conway Road, Orlando, FL 32812 407/851-1484 Fax 407/855-0369
A Subsidiary of Harding Associates • Offices Nationwide

BEST AVAILABLE COPY

The Orlando Sentinel

Published Daily

$207.80

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared JUANITA ROSADO, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a STATE OF FLORIDA in the matter of AC48-214902

in the ORANGE Court, was published in said newspaper in the issue; of 10/29/95

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Juanita Rosado

The foregoing instrument was acknowledged before me this 30 day of OCTOBER, 19 95, by JUANITA ROSADO, who is personally known to me and who did take an oath.

Beverly C. Simmons

(SEAL)

NOTARY PUBLIC STATE OF FLORIDA

BEVERLY C. SIMMONS
My Comm Exp. 5/10/97
Bonded By Service Ins
No. CC263839

[ ] Personally Known [ ] Other I.D.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
AC48-214902

The Department of Environmental Protection gives notice of its intent to issue a modification for construction permit No. AC48-214902 to Foamex, L.P., for their polyurethane foam manufacturing facility located in Orlando, Orange County, Florida. The modification will increase the allowable operating hours and result in an increase of volatile organic compounds (VOC) of approximately one ton per year.

The modification is not subject to the Prevention of Significant Deterioration (PSD) regulation which would otherwise require a Best Available Control Technology (BACT) determination. The modification will not cause or contribute to a violation of any state or federal ambient air quality standards.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) pursuant to Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition, to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207 Florida Administrative Code.

The applicant/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Central District
3319 Maguire Boulevard
Orlando, Florida 32308-3767

Orange County Environmental Protection Department
2002 E. Michigan Avenue
Orlando, Florida 32806

Any person may send written comments on the proposed action to Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

COR617551 OCT.29,1995

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

October 13, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit No. AC 48-214902
Polyurethane Foam Manufacturing Facility

Enclosed is one copy of the proposed permit modification, Intent to Issue, and Public Notice of Intent to Issue Permit Modification (for you to publish) for your polyurethane foam manufacturing facility located in Orange County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero, P.E., at the above address. If you have any questions, please call Cleve Holladay at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/ch/t

Enclosure

cc: C. Collins, CD
D. Nester, Orange County
K. Rykowski, HLA

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit Modification

DEP File Nos. AC48-214902
Orange County

Mr. Douglas Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

_________________________________/

INTENT TO ISSUE

The Department of Environmental Protection gives notice of its intent to issue a construction permit modification (copy attached) for the proposed project as detailed in the application/request specified above and for the reasons stated below.

The applicant, Foamex, L.P., applied on July 24, 1995, to the Department of Environmental Protection for a modification to their air construction permit for their polyurethane foam manufacturing facility located in Orlando, Orange County, Florida. The modification will increase the hours of operation and allow the use of more cleaning solvent. Emissions of VOC will increase by approximately one ton.

The modification is not subject to the Prevention of Significant Deterioration (PSD) Review and does not require a Best Available Control Technology (BACT) determination.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-212 and 62-4, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed change.

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit Amendment. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit amendment.

The Department will issue the permit amendment with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this **INTENT TO ISSUE PERMIT MODIFICATION** all copies were mailed by certified mail before the close of business on 10-16-95 to the listed persons.

Clerk Stamp
FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk 10-16-95
Date

Copies furnished to:

C. Collins, CD
D. Nester, Orange County
K. Rykowski, HLA

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT

AC48-214902

The Department of Environmental Protection gives notice of its intent to issue a modification for construction permit No. AC48-214902 to Foamex, L.P., for their polyurethane foam manufacturing facility located in Orlando, Orange County, Florida. The modification will increase the allowable operating hours and result in an increase of volatile organic compounds (VOC) of approximately one ton per year.

The modification is not subject to the Prevention of Significant Deterioration (PSD) regulation which would otherwise require a Best Available Control Technology (BACT) determination. The modification will not cause or contribute to a violation of any state or federal ambient air quality standards.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Central District
3319 Maguire Boulevard
Orlando, Florida 32308-3767

Orange County Environmental Protection Department
2002 E. Michigan Avenue
Orlando, Florida 32806

Any person may send written comments on the proposed action to Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

DRAFT

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

November xx, 1995

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

Mr. Douglas Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Re: Modification of Permit No. AC 48-214902
Polyurethane Foam Manufacturing Facility

The Department hereby modifies the Specific Conditions related to hours of operation and use of cleanup solvent at your plant in Orlando, Orange County, Florida.

Specific Condition 2.

From:

The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr toluene diisocyanate. Cleanup solvent losses shall not exceed: 2 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

To:

The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr toluene diisocyanate. Cleanup solvent losses shall not exceed: **20** gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

DRAFT

Specific Condition 3.

From:

Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	3	5	52	780
Rebond Process	24	6	52	7488
Foam Fabrication Operations	16	6	52	4992
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

To:

Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	**6**	**7**	52	**2184**
Rebond Process	24	**7**	52	**8760**
Foam Fabrication Operations	**24**	**7**	52	**8760**
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

DRAFT

Specific Condition 4.

From:

For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	lbs/hr	TPY
methylene chloride	1,519.11	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.157

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/ toluene diisocyanate	0.37	0.14
II.	Foam Line Stack/methylene chloride	955.8	153.93
III.	Long Bun Storage Room Stack/ methylene chloride	557.55	89.79
IV.	Foam Fabric Operations/		
	methylene chloride	5.1	14.41
	1,1,1 trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/ toluene diisocyanate	0.0046	0.017
VI	Tank Storage (Tank No. 10)/ methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

To:

For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

DRAFT

AVERAGE EMISSIONS FROM FACILITY OPERATIONS:

Chemicals	lbs/hr	TPY
methylene chloride	**2,222.43**	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	**0.424**

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
	Operation/chemical	lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production/		
	toluene diisocyanate	0.37	**0.404**
II.	Foam Line Stack/methylene chloride	**1,400**	153.93
III.	Long Bun Storage Room Stack/		
	methylene chloride	**816.67**	89.79
IV.	Foam Fabric Operations/		
	methylene chloride	5.1	14.41
	1,1,1 trichloroethane	2.5	1.86
V.	Rebond Polyurethane Foam Production/		
	toluene diisocyanate	0.0046	0.017
VI	Tank Storage (Tank No. 10)/		
	methylene chloride	0.66	2.92
VII.	Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VIII	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

A copy of this letter shall be attached to the referenced air construction permit and shall become a part of that permit.

Sincerely

Howard L. Rhodes, Director
Division of Air Resources Management

HLR/ch
Enclosure

cc: C. Collins, CD
D. Nester, Orange County
K. Rykowski, HLA

Memorandum

Florida Department of
Environmental Protection

TO: Clair Fancy

THROUGH: Al Linero AA Linero 10/12

FROM: Cleve Holladay CHolladay 10/12

DATE: October 12, 1995

SUBJ: Modification of Permit No. AC 48-214902
Foamex, L.P.

Attached is an Intent to Issue, a Public Notice, and a letter modifying a construction permit (draft) for a polyurethane manufacturing facility. The modification will allow Foamex to increase their maximum operating times for the Slabstock Process, Rebond Process and Foam Fabrication Operations at the facility. This increase in operating hours will result in a slight increase of 0.26 tons per year in toluene diisocyanate emissions. The modification will also allow Foamex to increase the amount of isopropyl alcohol for use as a cleanup solvent, which will result in a less than one ton per year increase in VOC emissions. No other increase in facility-wide allowable emissions are requested as a result of this modification.

AAL/ch/t

attachments

Z 127 632 544

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Douglas Terrill	
Street and No. Foamex, LP	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	10-16-95

Pmt. Mod.
AC 48-214902

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas Terrill, P. Mgr
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32821/37

4a. Article Number
Z 127 632 544

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
10-23-95

5. Signature (Addressee)
M Barber

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Harding Lawson Associates

RECEIVED
JUL 7 1995
Bureau of
Air Regulation

June 30, 1995

26005.F21.616

Mr. Alan D. Zahm, P.E.
Supervisor, Permitting
Florida Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

First Progress Report
Foamex L.P.
FDEP File No. AC48-214902

Dear Mr. Zahm:

Please find enclosed the First Progress Report as required by Specific Condition 6 of Permit AC48-214902 for the Foamex, L.P. Flexible Polyurethane Foam Manufacturing facility in Orlando.

Should you have any questions or comments regarding the information submitted, please do not hesitate to contact Kay Rykowski.

Yours very truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

Patricia Kay Rykowski
Senior Engineer

For JLT
Joseph L. Tessitore, P.E.
Managing Principal

PKR/pkr
foamex20.doc/

cc: Mr. Willard Hanks, FDEP - Tallahassee
Mr. Dennis Nester, OCEPD
Mr. Doug Terrill, Foamex, L.P.
Orlando, Florida
Mr. Arthur Pereira, Foamex, L.P.
East Providence, Rhode Island
Mr. Tom Burghardt, Foamex, L.P.
Linville, Pennsylvania

ATTACHMENT 1

First Progress Report
Foamex, L.P.

First Progress Report
June 30, 1995
Foamex, L.P.

1.0. Introduction

The purpose of this report is to describe the activities completed to date by Foamex, L.P. (Foamex) to implement the enhanced exhaust systems required by the Specific Conditions of Permit AC48-214902, and to work toward replacement of the existing manufacturing process technology or installation of air pollution equipment to meet MACT. This report is submitted to the Florida Department of Environmental Protection (FDEP) and the Orange County Environmental Protection Department (OCEPD) to comply with Specific Condition 6 of Permit AC48-214902. The sections below provide a description of the activities conducted to date by Foamex and Harding Lawson Associates (HLA), relating to installation of the enhanced exhaust systems, modification and/or replacement of the manufacturing process, and the status of the MACT requirements.

2.0. Installation of Enhanced Exhaust Systems

The requirements established in Permit AC48-214902 Specific Condition 1 are stated as follows::

> The enhanced exhaust systems shall be completed by February 15, 1996. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks (serving the Foam Line and Long Bun Storage Room) each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks (serving the Foam Fabrication areas) each handling 50,000 acfm of air; and two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks (serving the Rebond area) each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 62-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

As of this date, Foamex has entered into contractual obligations with a mechanical contractor for engineering and installation of the Foam Line enclosure and enhanced exhaust system serving the Foam Line and Long Bun Storage Rooms, and extension of roof vents and stacks. Design and engineering drawings are expected to be submitted to Foamex for approval by July 10, 1995.

In finalizing the design requirements and installation details, one change has been made in the approach to achieving the enhanced exhaust system as represented in the Construction Permit Application. In order to minimize the energy consumption, capital cost and operating costs Foamex is isolating the Foam Fabrication operations to the areas shown on the attached Figure 1. As shown on this figure, by limiting the operations to the smaller area, only six roof fans will be required for exhaust of Foam Fabrication emissions rather than seventeen as anticipated in the Construction Permit application.

Figure 2 attached provides a schedule for completion of design and installation of the enhanced exhaust system. A review of this schedule shows that Compliance Stack testing is anticipated to be conducted by November 27, and submittal of the Certificate of Completion of Construction is anticipated to be submitted by December 15, 1995. This schedule provides for completion of the enhanced exhausat systems well prior to the February 15, 1996 deadline as required by Specific Condition 1.

3.0 Manufacturing Process Modifications/Replacement

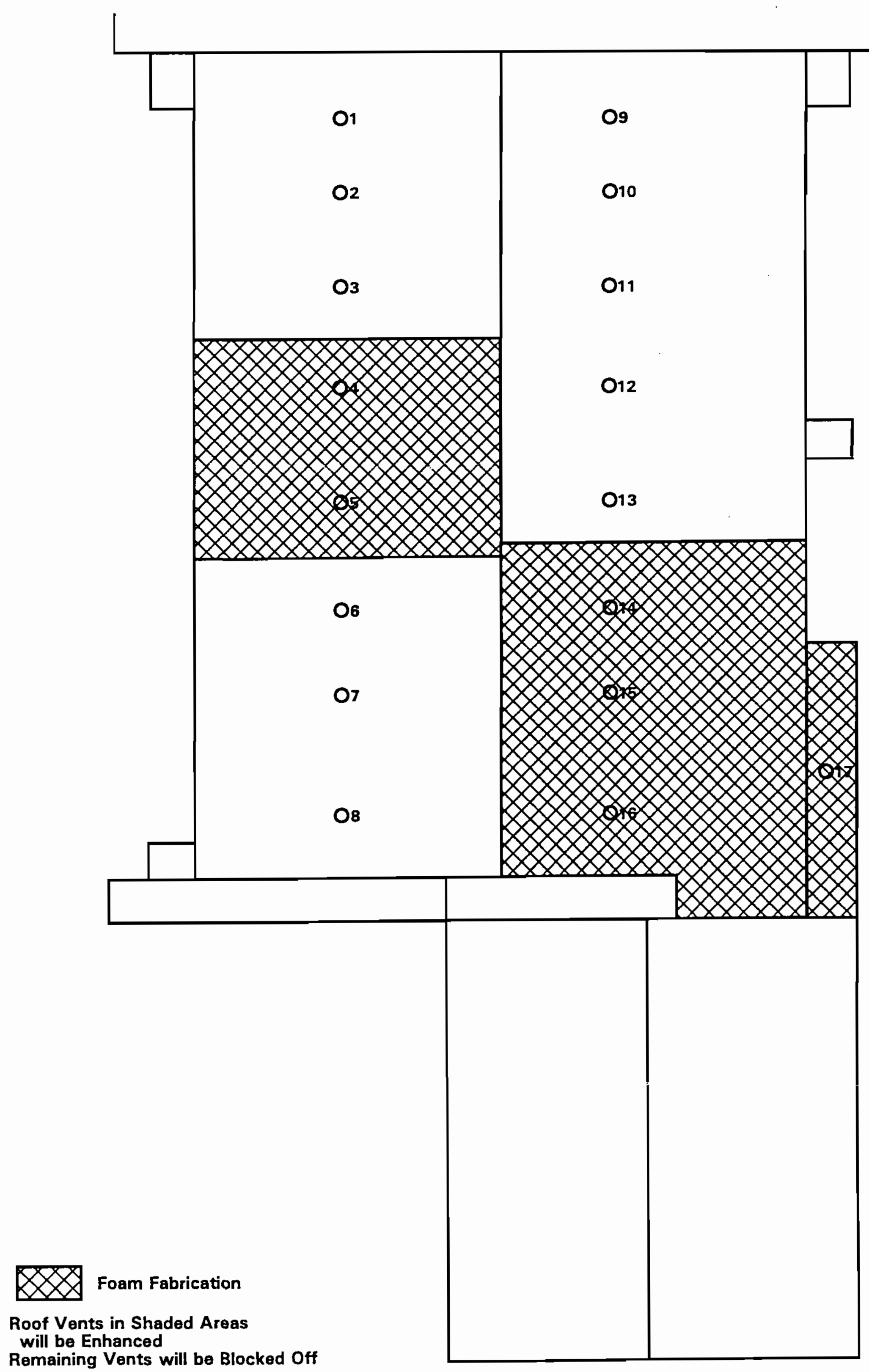
Foamex, L.P. is pursuing an ongoing effort to conduct periodic test pours using chemicals to reduce the amount of methylene chloride required as a blowing agent. Preliminary results have shown that methylene chloride may be reduced by as much as 50%, and acceptable product quality has been demonstrated using this approach for certain foam grades. Acceptable product quality has not yet been demonstrated for all foam grades, however research and development activity continues toward this objective.

In addition, Foamex is actively researching the use of Carbon Dioxide (CO_2) as a blowing agent. Thus far, the prospects are encouraging.

4.0 Status of MACT Requirements

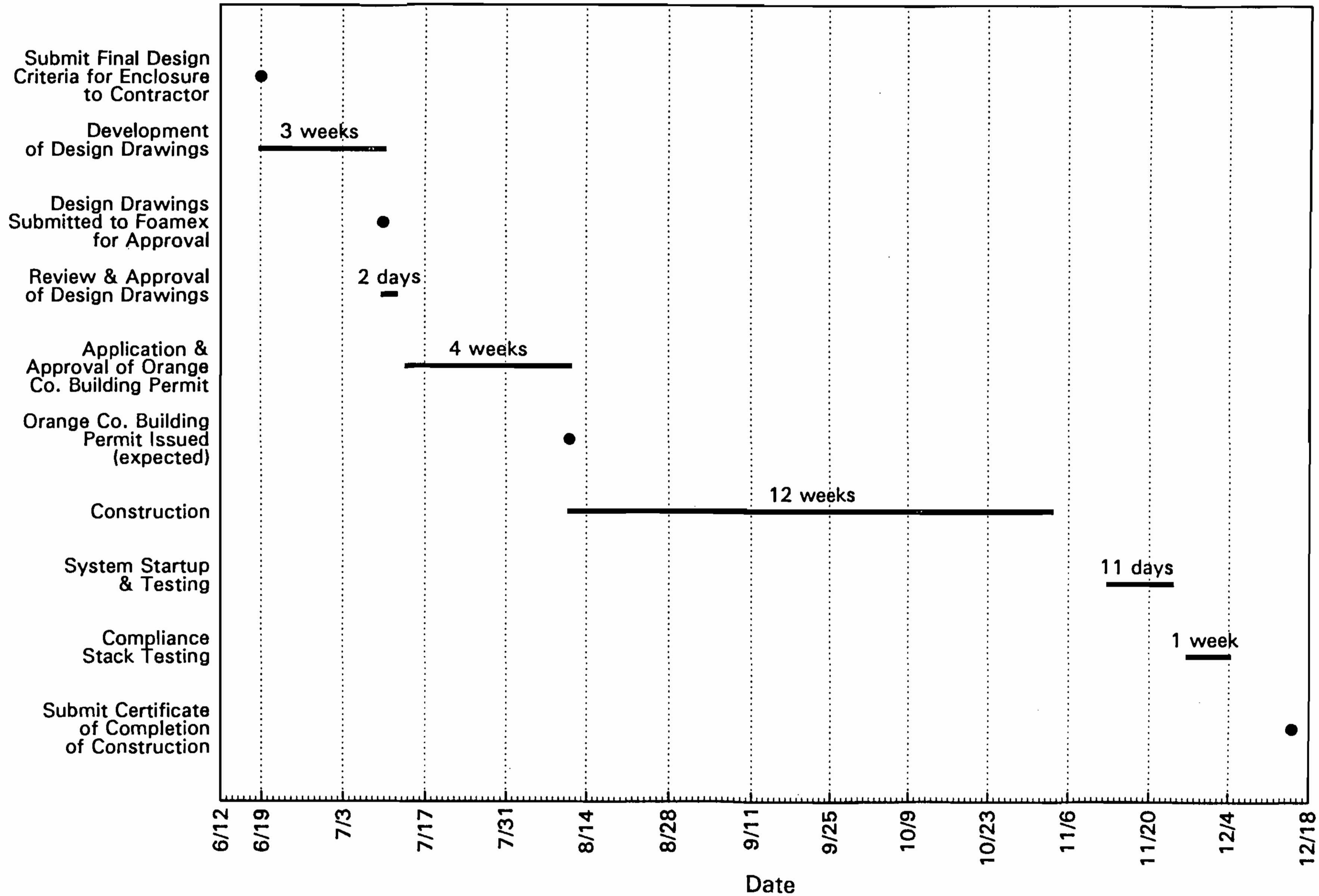
Based on the current data available from USEPA's Bulletin Board System (BBS), the current anticipated date for issuance of the Draft MACT standard or NESHAP (National Emission Standard for Hazardous Air Pollutants) for Flexible Polyurethane Foam Manufacturing is February 1996. Promulgation of the final NESHAP for this source category is anticipated for January 1997.

HLA is maintaining an ongoing effort to track development of the Draft standard by USEPA. As the required control strategy or definition of MACT for this industry emerges, HLA will work with Foamex, L.P. to evaluate the requirements as they apply to the Orlando facility.



Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

Figure 1. Roof Venitlation Plan AC48-214902
Foamex, L.P. - Orlando, Florida



Harding Lawson Associates
Engineering and Environmental Services
4763 South Conway Road
Orlando, Florida 32812 - (407) 851-1484

Figure 2. Compliance Schedule FDEP Permit AC48-214902
Foamex, L.P. - Orlando, Florida

Harding Lawson Associates

RECEIVED

JUL 24 1995

Bureau of Air Regulation

HLA

June 6, 1995

26005.F21.816

Mr. C.H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Request for Permit Amendment
Foamex L.P.
Permit No. AC48-214902

Dear Mr. Fancy:

This letter is to request an amendment to Construction Permit AC48-214902, recently issued to Foamex L.P. This letter presents a summary of the requested changes to the Specific Conditions 2, 3 and 4 issued by FDEP.

As discussed in the following comments and as stated in these attachments, the calculated maximum ground level concentrations for methylene chloride, toluene diisocayanate, or 1,1,1-trichloroethane based on the requested changes in Specific Conditions 2, 3 and 4 remain below the FDEP Acceptable Ambient Air Concentrations (AAAC). In addition, the requested changes do not result in any increase in annual emissions as calculated in the original application.

Should you have any questions or comments regarding this information, please do not hesitate to contact Ms. Kay Rykowski or Mr. Joe Tessitore at (407) 851-1484.

I told her every thing is ok
Isopropyl alcohol ok
using [illegible] instead of [illegible]

Yours Very Truly,

HARDING LAWSON ASSOCIATES

Patricia Kay Rykowski

[illegible] (for Joe)

Patricia Kay Rykowski
Senior Engineer

Joseph L. Tessitore, P.E.
Managing Principal

cc: Mr. Arthur Pereira, Foamex L.P.
Mr. Doug Terrill, Foamex, L.P.

Attachments:
A - Revised Pages of Volume I of Original Permit Application
B - Revised Pages of Volume II: Dispersion Modeling Analysis of Original Permit Application
C - Output Listings from Revised Modeling (appendixes D, E, G, H, & J of Volume II of Original Permit Application

PKR/JLT/slw
SC071795.KR1

Isopropyl Alc
18.x8 = 148 lbs/mo
1776 lbs/yr
< 1 TPY incr.

COMMENT 1

Foamex requests an increase in the amount of isopropyl alcohol allowed for use as a cleanup solvent. The requested change in Specific Condition 2 is provided below:

From:

2. The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lb/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 2 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 1,000 lbs/yr mineral spirits.

only Δ is 2 to 20 isopropyl

To:

2. The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 1,000,000 lbs/yr (500 TPY) polymer; 15,000,000 lbs/yr (7,500 TPY) polyol; and 10,000,000 lbs/yr (5,000 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 20 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and 1,000 lbs/yr mineral spirits.

There is no other increase in em from this facility

COMMENT 2

Foamex requests a change in the maximum operating times stated in Specific Condition 3 for the Slabstock Process, Rebond Process and Foam Fabrication Operations at the facility. The daily Slabstock Process operation is requested to be increased from 3 hrs/day to 6 hrs/day and the daily Foam Fabrication operation is requested to be increased from 16 hrs/day to 24 hrs/day. The weekly Slabstock Process operation is requested to be increased from 5 days/wk to 7 days/wk, the weekly Foam Fabrication operations is requested to be increased from 6 days/wk to 7 days/wk, and the weekly Rebond Process operation is requested to be increased from 6 days/wk to 7 days/day. These changes are requested to provide for greater flexibility in production scheduling, and to allow for production of high density foam grades.

Incr. in TDI

The requested increases in operating times for the Slabstock Process and Rebond Process result in an increase of the annual emission rates of TDI for each process. The requested increase in operating time for the Foam Fabrication Operations does not result any increase in annual emissions.

The requested increase in the operating time for Slabstock Process results in an increase in the 8-hour and 24-hour average emission rates of TDI from the Foam Line Stack and Long Bun Storage Room Stack (Source Numbers 1 and 2, respectively) used in the dispersion modeling analysis. The requested increase in the operating time for Foam Fabrication Operations results in an increase in the 24-hour average emission rates of methylene chloride and 1,1,1-trichloroethane from facility exhaust fans (Source Number 3 through 21) used in the dispersion modeling analysis.

In addition to the requested increases in operating hours Foamex has increased the daily methylene chloride usage for the Slabstock Process from 4,779 lb/day to 14,000 lb/day. This increase results in an increase in the 8-hour and 24-hour average emission rates of methylene chloride used in the dispersion

polyurethane foam manuf. in Orlando

modeling analysis. This increase in daily methylene chloride usage has no impact on the annual methylene chloride limit of 513,090 lb/yr.

HLA/CTA has revised the dispersion modeling analysis to account for the increased emission rates. The revised pages of "Volume II: Dispersion Modeling Analysis" of the permit application along with the output listings from the revised modeling analysis (Appendixes D, E, G, H, and J of Volume II) are attached. The results of the revised analysis, presented below, show that the maximum ground level concentrations for each pollutant are all at least 10% below the applicable FDEP AAAC's.

Compound	Averaging Time	Revised Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,514.6	1,740
	24-hour	247.8	417.6
	Annual	1.9*	2.1
Toluene Diisocyanate	8-hour	0.29	0.36
	24-hour	0.04	0.0864
1,1,1,-Trichloroethane	8-hour	7.5*	38,200
	24-hour	4.6	9,168

*Not affected by proposed changes

The requested change in Specific Condition 3 is provided below.

From:

3. Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	3	5	52	780
Rebond Process	24	6	52	7488
Foam Fabrication Operations	16	6	52	4992
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

To:

3. Maximum operation times for each operation at this facility are:

Operation	hr/day	days/week	weeks/year	hrs/year
Slabstock Process	6	7	52	2184
Rebond Process	24	7	52	8760
Foam Fabrication Operations	24	7	52	8760
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

COMMENT 3

As a result of the issues addressed in Comment 1, Foamex requests a modification of the estimated emissions stated in Specific Condition 4. The requested changes in Specific Condition 4 are provided below:

From:

4. For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM SIX OPERATIONS:

	lbs/hr	TPY
methylene chloride	1,519.11	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.157

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

		Emissions	
Operation/chemical		lbs/hr	TPY
I.	Slabstock Polyurethane Foam Production		
	a) toluene diisocyanate	0.37	0.14
	b) Foam Line Stack		
	methylene chloride	955.8	153.93
	c) Long Bun Storage Room Stack		
	methylene chloride	557.55	89.79
II.	Foam Fabric Operations	5.1	14.41
	methylene chloride	2.5	1.86
	1,1,1-trichloroethane		
III.	Rebond Polyurethane Foam Production		
	toluene diisocyanate	0.0046	0.017
IV.	Tank Storage (Tank No. 10)		
	methylene chloride	0.66	2.92
V.	Steam Boiler	Trace amounts of the normal production products of combustion (less than 1 lb/hr of all pollutants)	
VI.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

OK

To:

4. For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

June 6, 1995
26005.F21.816
Mr. C.H. Fancy, P.E.
FDEP
Page 6

AVERAGE EMISSIONS FROM SIX OPERATIONS:

	lbs/hr		TPY	
methylene chloride	2,222.43		261.03	S
1,1,1-trichloroethane	2.5	S	1.86	S
toluene diisocyanate	0.3746	S	0.424	S
	2225.3			

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

7

Operation/chemical		Emissions lbs/hr		Emissions TPY	
I.	Slabstock Polyurethane Foam Production				
	a) toluene diisocyanate	0.37	S	0.404	
	b) Foam Line Stack methylene chloride	1,400		153.93	S
	c) Long Bun Storage Room Stack methylene chloride	816.67		89.79	S
II.	Foam Fabric Operations	5.1	S	14.41	S
	methylene chloride	2.5	S	1.86	S
	1,1,1-trichloroethane				
III.	Rebond Polyurethane Foam Production toluene diisocyanate	0.0046	S	0.02	S
IV.	Tank Storage (Tank No. 10) methylene chloride	0.66	S	2.92	S
V.	Steam Boiler	Trace amounts of the normal production products of combustion (less than 1 lb/hr of all pollutants)			
VI.	Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)			

2225.3

product is then bonded to a polyethylene film. Finally the foam sheet product is cut to length and packaged into rolls, per customer order.

The TDI emissions from the Rebond process are currently vented to the atmosphere through two identical 1,000 CFM exhaust fans located in the ceiling directly above the process. These two exhaust fans will be increased in size to 15,000 CFM each and will be fitted with extensions to increase the their stack heights to 53 feet above ground level.

2.2.3 Tank Storage

The Foamex facility includes eleven above ground storage tanks for receiving and holding of the various raw materials used in the foam production processes. Table 3.3 provides a summary of the tanks, dimensions and products stored. Only one tank, Tank 10, is used for storage of methylene chloride. Foamex proposes to install a pressure relief valve on Tank 10 to minimize standing losses of methylene chloride. No physical or operational changes to the remaining storage tanks are proposed.

2.2.4 Steam Boiler

Foamex operates a natural gas fired industrial boiler rated at 100 HP. This boiler is used to convert an average of 1,570 gallons of water to steam each day for use in the Rebond process. No changes to the operation of the steam boiler are proposed.

2.2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 3.4 provides a listing of the individual heaters and the rated capacity of each heater.

2.2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place throughout the facility, except for the long bun storage room. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions from the gluing process are vented to the atmosphere through the seventeen exhaust fans located in the ceiling throughout the facility, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.2.1.

2.3 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;

- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

Table 2.1. Summary of Emission Sources
Foamex, L.P. - Orlando, Florida

Process Emission Source	Emission Point Number	Description
Slabstock Polyurethane Foam Production	1	Foam Line Stack
Slabstock Polyurethane Foam Production	2	Long Bun Storage Room Stack
Slabstock Foam Production/Foam Fabrication Operations	3	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	4	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	5	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	6	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	7	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	8	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	9	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	10	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	11	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	12	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	13	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	14	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	15	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	16	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	17	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	18	Exhaust Fan
Slabstock Foam Production/Foam Fabrication Operations	19	Exhaust Fan
Rebond Polyurethane Foam Production	20	Rebond Exhaust Fan
Rebond Polyurethane Foam Production	21	Rebond Exhaust Fan
Tank Storage	22	Tank #10
Steam Boiler	23	Boiler Stack
Environmental Heating	24	Natural Gas Heaters

3.0 PROCESS RATE AND EMISSION CALCULATIONS

3.1 Process Input Rate/Product Weight

3.1.1 Slabstock Foam Production

The Slabstock process, as described in Section 2.2.1 of this application, involves the mixture of various raw materials, the exact proportions of which are determined according to the desired product specifications. This process is a batch operation; each batch is referred to as a "pour". Pours can be of various durations, ranging up to six hours each. A summary of the process input and production rates for a typical pour are provided in Table 3.1.

Table 3.1. Slabstock Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Process Chemicals:		
Polyol	24,000	0
TDI	13,420	0
Amine Catalyst	79	0
Tin Catalyst	58	0
Water	1,068	0
Surfactant	180	0
Blowing Agent:		
Methylene Chloride	1,320	1,320 *
Product:		
Foam Product	0	36,199
Other Emissions:		
Carbon Dioxide	0	2,606

* 95% emitted throughout pour and cure periods; remaining 5% is emitted after foam buns leave the Long Bun Storage Room during foam fabrication operations.

It is important to note that the process input rate of primary importance from a regulatory standpoint is that of methylene chloride. While the values stated above represent a typical pour, the following analysis provides the basis for the maximum short term (hourly) methylene chlroide usage.

To calculate the maximum hourly usage rate of methylene chloride it is necessary to define the "worst case" maximum daily usage of methylene chloride. The "worst case" maximum daily methylene chloride usage is 14,000 lbs/day.

The maximum hourly usage rate of methylene chloride is then calculated as follows:

Maximum hourly usage = 14,000 lb/day ÷ 6 hr/day = 2,333.33 lb/hr

The maximum annual usage of methylene chloride at the facility will be limited to 513,090 lbs/yr.

3.1.2 Rebond Polyurethane Foam Production

A summary of the typical material input and production rates for the Rebond process are provided in Table 3.2.

Table 3.2. Rebond Polyurethane Foam Production Process Rates
Foamex, L.P. - Orlando, Florida

Substance	Process Input Rate (lbs/hr)	Production Rate (lbs/hr)
Raw Materials:		
Scrap Foam	5,608	0
Polyol	459	0
TDI	164	0
Product:		
Rebond Foam Product	0	6,231

3.1.3 Tank Storage

As stated previously in Section 2.2.3 of this application, the Foamex facility includes eleven above ground storage tanks. The current estimated maximum annual material throughput for each tank is shown in Table 3.3 below.

Maximum annual methylene chloride emissions = 513,090 lbs/yr ÷ 2,000 lbs/ton
= 256.55 tons/yr

The values shown above represent the total methylene chloride emissions from the slabstock foam production process. However, these emissions are distributed between each of the two stacks serving the process, the Foam Line Stack and the Long Bun Storage Room Stack, and the seventeen exhaust ceiling exhaust fans serving the Foam Fabrication Operations area. Both short term and long term emission rates must be calculated for the Foam Line Stack and Long Bun Storage Room Stack. Emissions calculations for the Foam Fabrication Operations are included under that heading in Section 3.2.6. Long term or annual emissions from the Foam Line and Long Bun Storage Room can be calculated by multiplying the distribution factors for each (60% and 35%, respectively) by the total maximum annual emissions specified above.

Foam Line Stack:

Maximum annual methylene chloride emissions = 513,090 lbs/yr x 0.60
= 307,854 lb/yr

Maximum annual methylene chloride emissions = 307,854 lbs/yr ÷ 2,000 lbs/ton
= 153.93 tons/yr

Long Bun Storage Room Stack:

Maximum annual methylene chloride emissions = 513,090 lbs/yr x 0.35
= 179,581.5 lb/yr

Maximum annual methylene chloride emissions = 179,581.5 lbs/yr ÷ 2,000 lbs/ton
= 89.79 tons/yr

The first step in developing an estimate of the maximum hourly emission rate for the Foam Line and Long Bun Storage Room is to define the "worst case" maximum daily methylene chloride usage. For this purpose, the "worst case" daily usage of methylene chloride, as defined in Section 3.1.1 of this application, is 14,000 lbs/day over six hours of operation (2,333.33 lb/hr). Assuming that 60% of this quantity is released during the pour period in the foam line enclosure as the foam travels along the process line conveyor before it reaches the Long Bun Storage Room, the Foam Line Stack emits a total of 8,400 pounds of methylene
1400 lbs/hr chloride over the six hour pour period. As the buns enter the Long Bun Storage Room, the remaining methylene chloride which is contained in the foam material begins to be released. Assuming that 35% of the methylene chloride used during the pour is released in the Long Bun Storage Room during the cure period, a total of 4,900 pounds of methylene chloride is emitted from the Long Bun Storage Room Stack. The 5% (700 pounds) of the methylene chloride remaining after the cure period in the foam product after it is removed from the Long Bun Storage Room is emitted seventeen exahust fans located throughout the rest of the facility during the foam fabrication operations.

As stated previously, the Long Bun Storage Room emissions decay at an exponential rate over the foam cure period. Appendix A provides a detailed analysis of the actual emission rate profile for the Long Bun Storage Room. However, for emission calculation purposes, a more simple approach representing a worst case scenario is used. This approach ignores the decay profile and the foam cure period and instead assumes that the total quantity of emissions is released at a steady rate during the pour period only. Because the length of the pour period is shorter than the cure period, the resulting maximum short term emission rate is higher.

Thus, this approach represents a worst case scenario. The following provides a simple summary of this mass balance.

Maximum methylene chloride usage	= 14,000 lbs
Maximum Foam Line Stack methylene chloride emissions	= 8,400 lbs
Maximum Long Bun Storage Room Stack methylene chloride emissions	= 4,900 lbs
Maximum methylene chloride emissions from seventeen exhaust fans	= 700 lbs
Maximum Total methylene chloride emissions	= 14,000 lbs

Using the worst case assumption that the total emissions for both the Foam Line Stack and Long Bun Storage Room Stack occur during the three hour pour period, the maximum hourly emission rates are calculated as follows:

Foam Line Stack:

Maximum hourly methylene chloride emissions = 8,400 lbs ÷ 6 hrs
= 1,400 lb/hr

Long Bun Storage Room Stack:

Maximum hourly methylene chloride emissions = 4,900 lbs ÷ 6 hrs
= 816.67 lb/hr

As stated above, emissions from the seventeen exhuast fans during foam fabrication operations are included under the heading Foam Fabrication Operations in Section 3.2.6.

3.2.1.2 Toluene Diisocyanate

As stated above, the Slabstock process involves the mixture of various process chemicals along with an auxiliary blowing agent to produce polyurethane foam. The calculations presented above provide an estimate of the emissions of the auxiliary blowing agent, methylene chloride. All of the methylene chloride used is volatilized and thus emitted from the process. The remaining process chemicals listed in the mass balance, shown in Section 3.1.1, combine to form the foam product. In 1991, Foamex conducted a stack test for emissions of methylene chloride and toluene diisocyanate (TDI). The test results, included in Appendix B, revealed that a small quantity of TDI is emitted from the process. Table 3.5 provides a summary of the test results.

Table 3.5. TDI Emissions Test Summary
Foamex, L.P. - Orlando, Florida

	TDI Isomer Emissions (lb/hr)		
	2,4-TDI	2,6-TDI	Total
Run 1	0.10	0.27	0.37
Run 2	0.04	0.10	0.14
Run 3	0.07	0.15	0.22
Average	0.07	0.17	0.24

Based on the highest results for a single run, the maximum TDI emissions are 0.37 lbs/hr. The maximum operating schedule of the Slabstock process is specified in Section 2.3 of this application as 6 hrs/day, 7 days/wk, 52 wks/yr. Therefore, the maximum annual hours during which TDI emissions occur based on the hours of operation is 2,184 hrs/yr. Therefore, the annual emissions of TDI are be calculated as follows:

Maximum hourly emission rate = 0.37 lbs/hr

Maximum annual emissions = (0.37 lbs/hr) x (2,184 hrs/yr) ÷ (2000 lbs/ton)
= 0.404 tons/yr

3.2.2 Rebond Polyurethane Foam Production

The TDI emissions estimated above for the Slabstock process are due to due evaporation of the chemical during its use. Although no testing has been conducted, it is assumed that similar emissions are generated from the Rebond process. To estimate the quantity of TDI emissions from the Rebond process, an emission factor was developed based on the maximum hourly emission rate and the typical TDI usage rate specified in section 3.2.1 for the Slabstock process. This emission factor can then be applied to the TDI usage rate for the Rebond process to obtain the emission rate. This emission rate is calculated as follows:

TDI emission factor = (0.37 lbs/hr emissions) ÷ (13,420 lbs/hr usage)
= 0.000028 lbs/lb

Maximum hourly Rebond process TDI emission rate = 0.000028 lbs/lb x 164 lbs/hr
= 0.0046 lbs/hr

Using the maximum operating schedule for the Rebond process of 24 hrs/day, 7 days/wk, 52 wks/yr (8,760 hrs/yr), the maximum annual emissions are calculated as follows:

Maximum annual Rebond process TDI emissions = 0.0046 lbs/hr x 8,760 hrs/yr
= 40.296 lbs/yr
= 0.02 tons/yr

3.2.3 Tank Storage

Appendix C provides detailed reports of emissions calculations for Tank 10, the methylene chloride storage tank. These reports were generated using EPA's TANKS Storage Tank Emissions Calculation Software,

Table 3.8. Emissions Summary
Foamex, L.P. Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/yr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	2216.67	243.72	N/A	N/A	2216.67	243.72
	Tank Storage	0.66	2.9	N/A	N/A	0.66	2.9
	Foam Fabrication	5.1	14.41	N/A	N/A	5.1	14.41
	Subtotal	2222.43	261.03	N/A	N/A	2222.43	261.03
1,1,1-Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.404	N/A	N/A	0.37	0.404
	Rebond Process	0.0046	0.02	N/A	N/A	0.0046	0.02
	Subtotal	0.3746	0.424	N/A	N/A	0.3746	0.424
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2)
2. Reference applicable emission standards and units (e.g. Rule 17-2.6000(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)
3. Calculated from operating data and applicable standard.
4. Emission, if source operated without control (See Section V Item 3).

2.5 Environmental Heating

There are thirteen indirect natural gas fired heaters existing at the Foamex facility. Of these, nine are used as needed during the winter months for heating the manufacturing and administrative areas of the facility. It is estimated that these heaters operate less than 400 hours per year. The remaining four heaters are not operational. Table 2 provides a listing of the individual heaters and the rated capacity of each heater. Emissions from the heaters are not addressed in this dispersion modeling analysis.

2.6 Foam Fabrication Operations

During foam fabrication operations, the foam buns manufactured during the Slabstock process are cut to size, assembled, and glued according to customer specifications. The fabrication operations take place throughout the facility, except for the long bun storage room. Approximately 3.1 lbs/hr of glue is used during these operations. Foamex primarily uses methylene chloride based glue in the foam fabrication operations, but may also occasionally use 1,1,1-trichloroethane based glue. The methylene chloride based glue has a maximum methylene chloride content of 70% by weight. The 1,1,1-trichloroethane based glue has a maximum concentration of 1,1,1-trichloroethane of 81% by weight. The emissions of methylene chloride and 1,1,1-trichloroethane from the gluing process are analyzed in this dispersion modeling analysis. The emissions from the gluing process are vented to the atmosphere through the seventeen exhaust fans located in the ceiling throughout the facility, which will be modified as part of the proposed enhanced collection and dispersion system as described in Section 2.1.

2.7 Requested Permitted Operating Time

For the processes and supporting operations discussed above, the requested hours of operation in the permit application are as follows:

- Slabstock Polyurethane Foam Production: 6 hrs/day; 7 days/wk; 52 wks/yr;
- Rebond Polyurethane Foam Production: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Tank Storage: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Steam Boiler: 24 hrs/day, 7 days/wk, 52 wks/yr;
- Environmental Heating: 400 hrs/yr; and
- Foam Fabrication Operations: 24 hrs/day, 7 days/wk, 52 wks/yr.

13.0 EMISSION RATES

Maximum hourly and daily usage rates were used to calculate the 8-hour and 24-hour average emission rates for each compound listed in Table 6. The maximum annual usage of methylene chloride was used to calculate the annual average emission rates of methylene chloride from the facility. The calculation of the emission rates used in the analysis is shown below and summarized in Table 7.

Compounds modeled:

- Methylene Chloride
- Toluene Diisocyanate (TDI)
- 1,1,1-Trichloroethane

Slabstock Foam Production Methylene Chloride emission distribution:

Foam Line Stack	=	60%
Long Bun Storage Room Stack	=	35%
17 Exhaust Fans	=	5%

It is assumed that the 17 exhaust fans' emissions are equally distributed among all 17 exhaust fans.

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production methylene chloride usage = 14,000 lb/day

8-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 8 hr/day
= 1,750.0 lb/hr

Distributed 8-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	1,750.0 lb/hr x 60%	=	1,050.0 lb/hr
Long Bun Storage Room Stack	=	1,750.0 lb/hr x 35%	=	612.5 lb/hr
17 Exhaust Fans	=	1,750.0 lb/hr x 5%	=	87.5 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum methylene chloride content of glue = 70%

Maximum hourly gluing process methylene chloride emission rate = 3.1 lb/hr x 70% = 2.17 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average gluing process methylene chloride emission rate:

17 Exhaust Fans	=	2.17 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.17 lb/hr

Distributed 8-hour average total methylene chloride emission rates:

Foam Line Stack	=	1,050.0 lb/hr		
Long Bun Storage Room Stack	=	612.5 lb/hr		
17 Exhaust Fans	=	87.5 lb/hr + 2.17 lb/hr	=	89.67 lb/hr
Each Exhaust Fan	=	89.67 lb/hr ÷ 17	=	5.2747 lb/hr

24-hour average slabstock foam production methylene chloride emission rate = 14,000 lb/day ÷ 24 hr/day
= 583.333 lb/hr

Distributed 24-hour average slabstock foam production methylene chloride emission rates:

Foam Line Stack	=	583.333 lb/hr x 60%	=	350.0 lb/hr
Long Bun Storage Room Stack	=	583.333 lb/hr x 35%	=	204.167 lb/hr
17 Exhaust Fans	=	583.333 lb/hr x 5%	=	29.167 lb/hr

24-hour average gluing process methylene chloride emission rate:

17 Exhaust Fans	=	2.17 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.17 lb/hr

Distributed 24-hour average total methylene chloride emission rates:

Foam Line Stack	=	350.0 lb/hr		
Long Bun Storage Room Stack	=	204.167 lb/hr		
17 Exhaust Fans	=	29.167 lb/hr + 2.17 lb/hr	=	31.337 lb/hr
Each Exhaust Fan	=	31.337 lb/hr ÷ 17	=	1.843 lb/hr

Maximum annual slabstock foam production methylene chloride usage = 513,090 lb/yr

Annual slabstock foam production average methylene chloride emission rate = 513,090 lb/yr ÷ 8,760 hr/yr
= 58.572 lb/hr

Distributed annual slabstock foam production average methylene chloride emission rates:

Foam Line Stack	=	58.572 lb/hr x 60%	=	35.1432 lb/hr
Long Bun Storage Room Stack	=	58.572 lb/hr x 35%	=	20.5002 lb/hr
17 Exhaust Fans	=	58.572 lb/hr x 5%	=	2.9286 lb/hr

Maximum annual glue usage = 4,600 lb/yr

Annual gluing process average methylene chloride emission rate = 4,600 lb/yr x 70% ÷ 8,760 hr/yr
= 0.3676 lb/hr

Distributed annual average total methylene chloride emission rates:

Foam Line Stack	=	35.1432 lb/hr		
Long Bun Storage Room Stack	=	20.5002 lb/hr		
17 Exhaust Fans	=	2.9286 lb/hr + 0.3676 lb/hr	=	3.2962 lb/hr
Each Exhaust Fan	=	3.2962 lb/hr ÷ 17	=	0.19389 lb/hr

Maximum slabstock foam production TDI emission rate = 0.37 lb/hr

Maximum daily slabstock foam production hours of operation = 6.0 hr/day

Maximum daily slabstock foam production TDI emissions = 0.37 lb/hr x 6.0 hr/day = 2.22 lb/day

TDI emission factor = 0.000028 lb emitted/lb used

Maximum hourly rebond process TDI usage rate = 164 lb/hr

Maximum hourly rebond process TDI emission rate = 164 lb/hr x 0.000028 lb/lb = 0.0046 lb/hr

Maximum daily rebond process hours of operation = 24.0 hr/day

8-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 8 hr/day	=	0.2775 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 8 hr/day ÷ 8 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0046 lb/hr ÷ 2	=	0.0023 lb/hr

24-hour average TDI emission rates:

Foam Line Stack	=	2.22 lb/day ÷ 24 hr/day	=	0.0925 lb/hr
2 Rebond Exhaust Fans	=	0.0046 lb/hr x 24 hr/day ÷ 24 hr/day	=	0.0046 lb/hr
Each Rebond Exhaust Fan	=	0.0023 lb/hr ÷ 2	=	0.0023 lb/hr

Maximum hourly glue usage rate = 3.1 lb/hr

Maximum 1,1,1-trichloroethane content of glue = 81%

Maximum hourly 1,1,1-trichloroethane emission rate = 3.1 lb/hr x 81% = 2.5 lb/hr

Maximum daily foam fabrication hours of operation = 24.0 hr/day

8-hour average 1,1,1-trichloroethane emission rates:

17 Exhaust Fans	=	2.5 lb/hr x 8 hr/day ÷ 8 hr/day	=	2.5 lb/hr
Each Exhaust Fan	=	2.5 lb/hr ÷ 17	=	0.14706 lb/hr

24-hour average 1,1,1-trichloroethane emission rates:

17 Exhaust Fans	= 2.5 lb/hr x 24 hr/day ÷ 24 hr/day	=	2.5 lb/hr
Each Exhaust Fan	= 2.5 lb/hr ÷ 17	=	0.14706 lb/hr

Table 7. Emission Rates
Foamex, L.P. - Orlando, Florida

		Emission Rates for Compounds Modeled						
		Methylene Chloride			Toluene Diisocyanate		1,1,1-Trichloroethane	
Source Number	Source Description	8-hour (lb/hr)	24-hour (lb/hr)	Annual (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)	8-hour (lb/hr)	24-hour (lb/hr)
1	Foam Line Stack	1,050.0	350.0	35.1432	0.2775	0.0925	0.0	0.0
2	Long Bun Storage Room Stack	612.5	204.167	20.5002	0.0	0.0	0.0	0.0
3	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
4	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
5	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
6	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
7	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
8	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
9	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
10	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
11	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
12	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
13	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
14	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
15	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
16	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
17	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
18	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
19	Exhaust Fan	5.2747	1.843	0.19389	0.0	0.0	0.14706	.14706
20	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0
21	Rebond Exhaust Fan	0.0	0.0	0.0	0.0023	0.0023	0.0	0.0

Ok

OK

14.0 RESULTS

The ISCST2 modeling was conducted for each compound and each averaging using the emission rates presented in Section 13.0. The overall maximum ground level concentrations from the ISCST2 modeling for each case are presented in Table 8 below. The output listings for each case are presented in Appendixes D through J. For comparison, Table 8 also shows the applicable FDEP AAAC's for each compound and averaging time. For the 8-hour and 24-hour averaging times for each compound the maximum ground level concentrations are less than 90% of the applicable FDEP AAAC's. The resulting maximum annual ground level concentration for methylene chloride is 1.9 $\mu g/m^3$, which is approximately 10% below the FDEP annual AAAC for methylene chloride of 2.1 $\mu g/m^3$. Therefore, based on the results of this dispersion modeling analysis, the emissions from the Foamex facility comply with FDEP's request that concentrations resulting from facility emissions be approximately 10% below FDEP's AAAC's.

Table 8. ISCST2 Modeling Results and Comparison with FDEP AAAC's
Foamex, L.P. - Orlando, Florida

Compound	Averaging Time	Maximum ISCST2 Ground Level Concentration ($\mu g/m^3$)	FDEP AAAC ($\mu g/m^3$)
Methylene Chloride	8-hour	1,514.6	1,740
	24-hour	247.8	417.6
	Annual	1.9	2.1
Toluene Diisocyanate	8-hour	0.29	0.36
	24-hour	0.04	0.0864
1,1,1-Trichloroethane	8-hour	7.5	38,200
	24-hour	4.6	9,168

Ok

OK

APPENDIX D

ISCST2 OUTPUT LISTING

METHYLENE CHLORIDE 8-HOUR AVERAGE EMISSIONS

RUN: FMXMC8

```
                ISCST2 - (DATED 93109)

                IBM-PC VERSION (2.11 ) ISCST2F
                (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  4/25/1995 at 11:03:51


*** TRINITY SOURCE FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXSRC.PNT
*** TRINITY DOWNWASH FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXREC.REC
CO STARTING
CO TITLEONE Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks
CO TITLETWO Methlyene Chloride 8-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 8
CO POLLUTID MC_8
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT    175.87     119.79     0.00
SO SRCPARAM FOAMLINE 132.2976    38.10     299.82    24.5307     0.857
SO LOCATION LONGBUN POINT    152.40     17.07     0.00
SO SRCPARAM LONGBUN 77.17362    38.10     299.82    24.5307     0.857
SO LOCATION EXFAN_3 POINT    108.51     97.23     0.00
SO SRCPARAM EXFAN_3 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_4 POINT    108.51    110.64     0.00
SO SRCPARAM EXFAN_4 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_5 POINT    108.51    119.79     0.00
SO SRCPARAM EXFAN_5 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_6 POINT    108.51    135.64     0.00
SO SRCPARAM EXFAN_6 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_7 POINT    108.51    152.71     0.00
SO SRCPARAM EXFAN_7 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_8 POINT    108.51    168.86     0.00
SO SRCPARAM EXFAN_8 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_9 POINT    108.51    183.79     0.00
SO SRCPARAM EXFAN_9 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_10 POINT    108.51    192.94     0.00
SO SRCPARAM EXFAN_10 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_11 POINT    147.52     97.23     0.00
SO SRCPARAM EXFAN_11 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_12 POINT    147.52    110.64     0.00
SO SRCPARAM EXFAN_12 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_13 POINT    147.52    119.79     0.00
SO SRCPARAM EXFAN_13 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_14 POINT    147.52    135.64     0.00
SO SRCPARAM EXFAN_14 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_15 POINT    147.52    152.71     0.00
SO SRCPARAM EXFAN_15 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_16 POINT    147.52    168.86     0.00
SO SRCPARAM EXFAN_16 0.664600    16.15     299.82    24.6109     1.105
SO LOCATION EXFAN_17 POINT    147.52    183.79     0.00
SO SRCPARAM EXFAN_17 0.664600    16.15     299.82    24.6109     1.105
```

```
SO LOCATION EXFAN_18 POINT     147.52      192.94       0.00
SO SRCPARAM EXFAN_18 0.664600       16.15      299.82     24.6109       1.105
SO LOCATION EXFAN_19 POINT     182.88      102.56       0.00
SO SRCPARAM EXFAN_19 0.664600       16.15      299.82     24.6109       1.105
SO BUILDHGT FOAMLINE    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     12.19
SO BUILDHGT FOAMLINE    12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     15.24
SO BUILDWID  FOAMLINE      80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  FOAMLINE      39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID  FOAMLINE      37.02     33.83     93.48     88.29     80.42     12.19
SO BUILDWID  FOAMLINE      18.62     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  FOAMLINE      39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID  FOAMLINE      37.02     33.83     93.48     88.29     80.42     70.11
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID  LONGBUN      80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  LONGBUN      85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID  LONGBUN      95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID  LONGBUN      80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  LONGBUN      85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID  LONGBUN      95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_3    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_3    12.19     12.19     12.19     15.24     15.24     15.24
SO BUILDHGT EXFAN_3    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDHGT EXFAN_3    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_3    12.19     12.19     12.19     15.24     15.24     15.24
SO BUILDHGT EXFAN_3    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID  EXFAN_3     116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_3     101.55    104.18    103.63     76.71     85.56     91.81
SO BUILDWID  EXFAN_3      95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDWID  EXFAN_3     116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_3      39.97     39.64     38.10     76.71     85.56     91.81
SO BUILDWID  EXFAN_3      95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_4    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_4    10.67     12.19     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_4    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDHGT EXFAN_4    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_4    10.67     12.19     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_4    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID  EXFAN_4     116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_4     146.50    104.18    103.63    114.23     85.56     91.81
SO BUILDWID  EXFAN_4      95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDWID  EXFAN_4     116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_4     146.50     39.64     38.10     39.64     85.56     91.81
SO BUILDWID  EXFAN_4      95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     12.19     12.19     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     12.19     12.19     15.24     15.24
```

```
SO BUILDHGT EXFAN_5    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_5     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_5     146.50   135.51   103.63   114.23    85.56    91.81
SO BUILDWID  EXFAN_5     150.26   148.19   141.62   101.32    87.04    97.54
SO BUILDWID  EXFAN_5     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_5     146.50   135.51    38.10    39.64    85.56    91.81
SO BUILDWID  EXFAN_5      95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    12.19    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    12.19    12.19    15.24
SO BUILDHGT EXFAN_6    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_6     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_6     146.50   135.51   120.40   114.23   140.77   147.76
SO BUILDWID  EXFAN_6     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_6     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_6     146.50   135.51   120.40    39.64    39.97    91.81
SO BUILDWID  EXFAN_6      95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_7     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_7     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7      95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_8     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_8     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_9     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_9     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
```

```
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDWID  EXFAN_10    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_10    146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_10    150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_10    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_10    146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_10    150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_11     80.42   88.29   93.48   95.83   95.26   91.81
SO BUILDWID  EXFAN_11     85.56  104.18  103.63   76.71   85.56   91.81
SO BUILDWID  EXFAN_11     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDWID  EXFAN_11     80.42   88.29   93.48   95.83   95.26   91.81
SO BUILDWID  EXFAN_11     85.56   39.64   38.10   76.71   85.56   91.81
SO BUILDWID  EXFAN_11     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   12.19
SO BUILDHGT EXFAN_12    12.19   12.19   12.19   12.19   12.19   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   12.19
SO BUILDHGT EXFAN_12    12.19   12.19   12.19   12.19   12.19   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_12     80.42   88.29   93.48   95.83   95.26   39.09
SO BUILDWID  EXFAN_12     39.97   39.64  103.63  114.23   39.97   91.81
SO BUILDWID  EXFAN_12     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDWID  EXFAN_12     80.42   88.29   93.48   95.83   95.26   39.09
SO BUILDWID  EXFAN_12     39.97   39.64   38.10   39.64   39.97   91.81
SO BUILDWID  EXFAN_12     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   10.67   10.67
SO BUILDHGT EXFAN_13    10.67   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   10.67   10.67
SO BUILDHGT EXFAN_13    10.67   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_13     80.42   88.29   93.48   95.83  154.93  153.04
SO BUILDWID  EXFAN_13    146.50   39.64  103.63  114.23  121.36  124.80
SO BUILDWID  EXFAN_13     95.26   95.83   93.48   88.29   87.04   70.11
SO BUILDWID  EXFAN_13     80.42   88.29   93.48   95.83  154.93  153.04
SO BUILDWID  EXFAN_13    146.50   39.64   38.10   39.64   39.97   39.09
SO BUILDWID  EXFAN_13     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_14    15.24   15.24   15.24   10.67   10.67   10.67
SO BUILDHGT EXFAN_14    10.67   10.67   10.67   10.67   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   15.24   10.67   12.19   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   12.19   15.24   10.97   10.97   10.67
SO BUILDHGT EXFAN_14    10.67   10.67   10.67   10.67   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_14     80.42   88.29   93.48  152.11  154.93  153.04
SO BUILDWID  EXFAN_14    146.50  135.51  120.40  129.50  121.36  124.80
SO BUILDWID  EXFAN_14    124.45   95.83  141.62  101.32   87.04   70.11
SO BUILDWID  EXFAN_14     80.42   88.29   93.48   24.97   24.41  153.04
SO BUILDWID  EXFAN_14    146.50  135.51  120.40  129.50   39.97   39.09
```

```
SO BUILDWID  EXFAN_14    37.02   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_15   15.24   15.24   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_15   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_15   12.19   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_15   12.19   12.19   10.67   10.97   10.97   10.97
SO BUILDHGT EXFAN_15   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_15   12.19   12.19   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_15    80.42   88.29  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_15   146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_15   124.45  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_15    80.42   88.29  144.67   24.97   24.41   23.11
SO BUILDWID  EXFAN_15   146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_15    37.02   33.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_16   12.19   12.19   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_16   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_16   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_16   10.67   10.67   10.67   10.67   10.97   10.97
SO BUILDHGT EXFAN_16   10.97   10.97   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_16   10.67   12.19   12.19   12.19   12.19   12.19
SO BUILDWID  EXFAN_16    80.42   88.29  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_16   146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_16   150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_16   116.96  132.83  144.67  152.11   24.41   23.11
SO BUILDWID  EXFAN_16    21.10   18.45  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_16   150.26   33.83   29.61   24.49   87.04   70.11
SO BUILDHGT EXFAN_17   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_17   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_17   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_17   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_17   10.97   10.97   10.97   10.97   10.97   10.67
SO BUILDHGT EXFAN_17   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDWID  EXFAN_17   116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_17   146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_17   150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_17   116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_17    21.10   18.45   15.24   18.45   21.10  147.76
SO BUILDWID  EXFAN_17   150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDHGT EXFAN_18   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_18   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_18   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_18   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_18   10.67   10.67   10.97   10.97   10.97   10.97
SO BUILDHGT EXFAN_18   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDWID  EXFAN_18   116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_18   146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_18   150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_18   116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_18   146.50  135.51   15.24   18.45   21.10   23.11
SO BUILDWID  EXFAN_18   150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDHGT EXFAN_19   15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_19   15.24   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_19   12.19   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_19   15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_19   15.24   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_19   12.19   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_19    80.42   88.29   93.48   95.83   95.26   91.81
SO BUILDWID  EXFAN_19    85.56   39.64   38.10   39.64   39.97   39.09
```

```
SO BUILDWID  EXFAN_19      37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  EXFAN_19      80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19      85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  EXFAN_19      37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
```

```
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 8 FIRST
OU MAXTABLE 8 50
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

```
**MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT

                              ***     MODEL SETUP OPTIONS SUMMARY      ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   8-HR

**This Run Includes:   19 Source(s);     1 Source Group(s); and    706 Receptor(s)

**The Model Assumes A Pollutant Type of:  MC_8

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;   Decay Coef. =   0.0000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                               ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: D:\MODELDAT\ISCST2\FMXTEMP\FMXMC8.DAT   ;  **Output Print File: D:\MODELDAT\ISCST2\FMXTEMP\FMXMC8.LST
```

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.13230E+03	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.77174E+02	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_3	0	0.66460E+00	108.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_4	0	0.66460E+00	108.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_5	0	0.66460E+00	108.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_6	0	0.66460E+00	108.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_7	0	0.66460E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_8	0	0.66460E+00	108.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_9	0	0.66460E+00	108.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_10	0	0.66460E+00	108.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_11	0	0.66460E+00	147.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.66460E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_13	0	0.66460E+00	147.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_14	0	0.66460E+00	147.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_15	0	0.66460E+00	147.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_16	0	0.66460E+00	147.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_17	0	0.66460E+00	147.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_18	0	0.66460E+00	147.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.66460E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	12.2,	101.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_5

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_6

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	12.2,	114.2,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_8

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_9

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_10

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_11

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_13

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_14

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	12.2,	124.5,	0	14	15.2,	95.8,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	15.2,	93.5,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_15

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	12.2,	124.5,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	10.7,	144.7,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_16

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	12.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	24.5,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_17

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_18

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	11.0,	23.1,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

```
(     0.0,     0.0,     0.0,     0.0);     (    15.2,     0.0,     0.0,     0.0);
(    30.5,     0.0,     0.0,     0.0);     (    45.7,     0.0,     0.0,     0.0);
(    61.0,     0.0,     0.0,     0.0);     (    76.2,     0.0,     0.0,     0.0);
(    91.4,     0.0,     0.0,     0.0);     (   106.7,     0.0,     0.0,     0.0);
(   121.9,     0.0,     0.0,     0.0);     (   137.2,     0.0,     0.0,     0.0);
(   152.4,     0.0,     0.0,     0.0);     (   167.6,     0.0,     0.0,     0.0);
(   182.9,     0.0,     0.0,     0.0);     (   198.1,     0.0,     0.0,     0.0);
(   213.4,     0.0,     0.0,     0.0);     (   213.4,    15.2,     0.0,     0.0);
(   213.4,    30.5,     0.0,     0.0);     (   213.4,    45.7,     0.0,     0.0);
(   213.4,    61.0,     0.0,     0.0);     (   213.4,    76.2,     0.0,     0.0);
(   213.4,    91.4,     0.0,     0.0);     (   213.4,   106.7,     0.0,     0.0);
(   213.4,   121.9,     0.0,     0.0);     (   213.4,   137.2,     0.0,     0.0);
(   213.4,   152.4,     0.0,     0.0);     (   213.4,   167.6,     0.0,     0.0);
(   213.4,   182.9,     0.0,     0.0);     (   213.4,   198.1,     0.0,     0.0);
(   213.4,   213.4,     0.0,     0.0);     (   213.4,   221.0,     0.0,     0.0);
(   198.1,   221.0,     0.0,     0.0);     (   182.9,   221.0,     0.0,     0.0);
(   167.6,   221.0,     0.0,     0.0);     (   152.4,   221.0,     0.0,     0.0);
(   137.2,   221.0,     0.0,     0.0);     (   121.9,   221.0,     0.0,     0.0);
(   106.7,   221.0,     0.0,     0.0);     (    91.4,   221.0,     0.0,     0.0);
(    76.2,   221.0,     0.0,     0.0);     (    61.0,   221.0,     0.0,     0.0);
(    45.7,   221.0,     0.0,     0.0);     (    30.5,   221.0,     0.0,     0.0);
(    15.2,   221.0,     0.0,     0.0);     (     0.0,   221.0,     0.0,     0.0);
(     0.0,   213.4,     0.0,     0.0);     (     0.0,   198.1,     0.0,     0.0);
(     0.0,   182.9,     0.0,     0.0);     (     0.0,   167.6,     0.0,     0.0);
(     0.0,   152.4,     0.0,     0.0);     (     0.0,   137.2,     0.0,     0.0);
(     0.0,   121.9,     0.0,     0.0);     (     0.0,   106.7,     0.0,     0.0);
(     0.0,    91.4,     0.0,     0.0);     (     0.0,    76.2,     0.0,     0.0);
(     0.0,    61.0,     0.0,     0.0);     (     0.0,    45.7,     0.0,     0.0);
(     0.0,    30.5,     0.0,     0.0);     (     0.0,    15.2,     0.0,     0.0);
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_10	121.9	221.0	31.08
EXFAN_10	106.7	221.0	28.10
EXFAN_18	152.4	221.0	28.46
EXFAN_18	137.2	221.0	29.89
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	467.80795 (86071316)	839.84351 (86071316)	1186.14526 (86071316)	1370.84949 (86071316)	1394.11548 (86071316)
20.0	382.49103 (86071316)	642.76019 (86071316)	849.87451 (86071316)	914.62170 (86071316)	874.65741 (86010216)
30.0	287.05066 (86060816)	509.26520 (86060816)	668.65405 (86060816)	681.94666 (86080616)	772.87286 (86010216)
40.0	248.42003 (86060816)	370.00537 (86053116)	649.82428 (86053116)	889.47931 (86080416)	1111.13928 (86080416)
50.0	175.35704 (86060816)	365.83279 (86053116)	569.19824 (86053116)	808.80591 (86072616)	1018.69971 (86072616)
60.0	155.01828 (86053116)	265.27298 (86053116)	458.67258 (86072616)	689.15277 (86072616)	830.09125 (86072616)
70.0	107.90281 (86053116)	221.59613 (86071516)	429.56100 (86072016)	734.27856 (86072016)	977.47461 (86072016)
80.0	94.10939 (86012716)	182.87732 (86071516)	338.01385 (86091216)	665.11932 (86091216)	918.41565 (86091216)
90.0	102.32682 (86012724)	135.07843 (86071516)	333.96942 (86071516)	561.17932 (86091216)	786.32672 (86091216)
100.0	120.20651 (86012724)	133.77615 (86012724)	282.22348 (86050816)	491.92596 (86050816)	695.66260 (86071916)
110.0	141.35661 (86012724)	183.59584 (86042916)	344.61423 (86050816)	591.01929 (86050816)	794.79492 (86042916)
120.0	131.27574 (86042616)	245.81355 (86042616)	453.80286 (86042616)	710.35883 (86090216)	907.45953 (86090216)
130.0	126.60799 (86042616)	235.56964 (86042616)	461.53833 (86042616)	778.19385 (86042616)	1048.98413 (86042616)
140.0	118.52532 (86042316)	170.49365 (86042316)	322.20251 (86050316)	561.06714 (86042816)	824.64874 (86042816)
150.0	141.86208 (86011116)	217.73465 (86101616)	413.66943 (86101616)	684.96478 (86101616)	977.74243 (86101616)
160.0	148.87495 (86032216)	323.37408c(86082316)	487.32990 (86110316)	659.30347 (86110316)	747.89313 (86110316)
170.0	217.46613 (86032216)	454.43573c(86082316)	731.97571c(86082316)	936.06659c(86082316)	1148.71777 (86110316)
180.0	219.79152c(86082316)	485.63007c(86082316)	790.80304c(86082316)	1076.58411c(86082316)	1232.34546c(86082316)
190.0	306.36725c(86082316)	549.37286c(86082316)	800.52667c(86082316)	1003.39319c(86082316)	1109.74341c(86082316)
200.0	413.14069c(86082316)	716.06451c(86082316)	1005.21808c(86082316)	1187.69910c(86082316)	1225.92444c(86082316)
210.0	452.67221c(86082316)	804.68268c(86082316)	1129.55139c(86082316)	1351.69409c(86082316)	1429.48853c(86082316)
220.0	388.18683c(86082316)	697.60419c(86082316)	966.79486c(86082316)	1155.24268c(86082316)	1247.65662c(86082316)
230.0	379.08670 (86051716)	633.68250 (86051116)	869.07074 (86062616)	1038.26245 (86062616)	1097.33936 (86062616)
240.0	408.36349 (86051716)	606.16711 (86062616)	877.76331 (86062616)	1071.76453 (86062616)	1157.44897 (86062616)
250.0	403.08566 (86051716)	588.13037 (86062616)	810.44946 (86062616)	972.74170 (86062616)	1072.42053 (86062616)
260.0	362.31717 (86051716)	485.84775 (86062616)	668.98584 (86062616)	797.09253 (86051316)	859.85254 (86062616)
270.0	435.47092 (86043016)	659.96075 (86043016)	795.58661 (86043016)	856.72473 (86043016)	900.01886 (86070716)
280.0	535.67590 (86043016)	833.80615 (86043016)	1004.30878 (86043016)	1056.00244 (86043016)	1033.71680 (86043016)
290.0	536.39056 (86043016)	846.61121 (86040616)	1107.41260 (86040616)	1224.52686 (86040616)	1242.37109 (86040616)
300.0	500.08847 (86081016)	918.90021 (86040616)	1250.54541 (86040616)	1425.35974 (86040616)	1479.02783 (86040616)
310.0	515.99084 (86062416)	877.68896 (86040616)	1168.36182 (86040616)	1286.99622 (86040616)	1285.93298 (86040616)
320.0	507.86401 (86071716)	792.07611 (86052916)	1023.40063 (86052916)	1097.24170 (86052916)	1052.19873 (86052916)
330.0	458.24863 (86071716)	674.78577 (86052916)	811.13074 (86082516)	983.46515 (86082516)	1097.72729 (86082516)
340.0	503.47501 (86080516)	718.63226 (86080516)	875.75256 (86082716)	1037.10181 (86082716)	1100.86011 (86082716)
350.0	534.78888 (86080516)	826.10266 (86080516)	1002.10901 (86071316)	1170.90332 (86071316)	1263.89661 (86100916)
360.0	479.08731 (86071316)	850.05432 (86071316)	1208.22144 (86071316)	1418.38379 (86071316)	1476.61426 (86071316)

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	1315.51550 (86071316)	1193.44604 (86071316)	1057.95142 (86071316)	981.56256 (86080316)	934.62653 (86080316)
20.0	971.05023 (86010216)	1017.77710 (86010216)	1025.98218 (86010216)	1006.13641 (86010216)	968.98297 (86010216)
30.0	862.59790 (86080416)	902.02637 (86080416)	902.72974 (86080416)	872.83447 (86080416)	826.22882 (86080416)
40.0	1207.14270 (86080416)	1205.15222 (86080416)	1151.70935 (86080416)	1065.93958 (86080416)	969.12634 (86080416)
50.0	1112.88574 (86072616)	1118.88416 (86072616)	1076.45715 (86072616)	1004.29034 (86072616)	920.31305 (86072616)
60.0	1131.35046 (86100416)	1345.89331 (86100416)	1471.13745 (86100416)	1514.55920 (86100416)	1497.76831 (86100416)
70.0	1111.59839 (86072016)	1158.24329 (86072016)	1188.82446 (86081816)	1271.08459 (86081816)	1300.53345 (86081816)
80.0	1045.41858 (86091216)	1064.67822 (86091216)	1021.39954 (86091216)	946.21637 (86022616)	908.28992 (86022616)
90.0	920.10431 (86091216)	968.80664 (86091216)	962.72034 (86091216)	922.17236 (86071916)	870.93018 (86071916)
100.0	853.27869 (86071916)	935.02161 (86071916)	963.33154 (86071916)	950.34521 (86071916)	911.60577 (86071916)
110.0	1048.76819 (86042916)	1237.57996 (86042916)	1353.22327 (86042916)	1402.56763 (86042916)	1402.44397 (86042916)
120.0	1034.11206 (86042816)	1115.73193 (86042816)	1213.38440 (86042916)	1270.53479 (86042916)	1273.55310 (86042916)
130.0	1209.44495 (86042616)	1265.95410 (86042616)	1252.09143 (86042616)	1197.76160 (86012816)	1242.40271 (86012816)
140.0	987.20178 (86042816)	1048.55078 (86042816)	1039.96082 (86042816)	995.25757 (86042616)	929.98230 (86042616)
150.0	1221.68176 (86101616)	1384.34314 (86101616)	1463.76477 (86101616)	1477.02197 (86101616)	1443.84033 (86101616)
160.0	956.95831 (86101616)	1152.38269 (86101616)	1288.79590 (86101616)	1370.70459 (86101616)	1406.06189 (86101616)
170.0	1316.47290 (86110316)	1380.43872 (86110316)	1362.81445 (86110316)	1300.49146 (86110316)	1211.85999 (86110316)
180.0	1242.61633c(86082316)	1235.11890 (86110316)	1321.57886 (86110316)	1353.55493 (86110316)	1343.71948 (86110316)
190.0	1119.23743c(86082316)	1054.08276c(86082316)	949.56641c(86082316)	908.21844 (86102116)	875.36011 (86102116)
200.0	1159.65723c(86082316)	1226.65710 (86120416)	1309.01978 (86120416)	1336.51001 (86120416)	1323.34839 (86120416)
210.0	1384.87476c(86082316)	1264.17896c(86082316)	1111.30896c(86082316)	1060.19446 (86111316)	1011.71893 (86111316)
220.0	1254.37524c(86082316)	1196.42419c(86082316)	1097.70044c(86082316)	1119.94580 (86060516)	1141.03857 (86060516)
230.0	1085.04126 (86062616)	1030.47583 (86062616)	978.62573 (86091616)	932.98181 (86091616)	874.40155 (86091616)
240.0	1156.54639 (86062616)	1100.88013 (86062616)	1064.95288 (86091516)	1020.52966 (86091516)	957.95435 (86091516)
250.0	1114.60535 (86062616)	1116.98425 (86091516)	1145.99353 (86091516)	1148.39624 (86091516)	1130.61938 (86091516)
260.0	888.51703 (86062616)	884.14484 (86062616)	858.34601 (86062616)	848.22833 (86121416)	841.40826 (86121416)
270.0	938.95038 (86062316)	932.77948 (86062316)	893.23071 (86062316)	835.97876 (86062316)	773.81152c(86082616)
280.0	1098.88806 (86062316)	1147.95032 (86062316)	1168.14038 (86062316)	1167.27246 (86062316)	1151.28528 (86062316)
290.0	1200.06750 (86040616)	1121.19226 (86040616)	1028.28296 (86040616)	1013.62067 (86062316)	995.49506 (86062316)
300.0	1456.10742 (86040616)	1381.43127 (86040616)	1283.47400 (86040616)	1178.79614 (86040616)	1076.23572 (86040616)
310.0	1224.80029 (86040616)	1127.42749 (86040616)	1073.58411 (86112516)	1055.62195 (86112516)	1022.81171 (86112516)
320.0	1105.67065 (86112516)	1117.94348 (86112516)	1090.59827 (86112516)	1040.41479 (86112516)	978.86725 (86112516)
330.0	1158.24536 (86082516)	1173.03540 (86082516)	1152.89380 (86082516)	1110.34229 (86082516)	1054.84314 (86082516)
340.0	1140.08105 (86031216)	1254.98071 (86031216)	1326.09290 (86031216)	1360.46655 (86031216)	1366.36743 (86031216)
350.0	1345.89526 (86100916)	1361.28955 (86100916)	1327.87720 (86100916)	1266.34436 (86100916)	1191.27295 (86100916)
360.0	1430.84998 (86071316)	1333.89294 (86071316)	1315.92383 (86112616)	1358.98547 (86112616)	1372.27295 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION	DISTANCE (METERS)				
(DEGREES)	650.00	700.00	750.00	800.00	850.00
10.0	881.34631 (86080316)	825.82190 (86080316)	770.70361 (86080316)	717.60254 (86080316)	695.48138 (86073008)
20.0	922.10767 (86010216)	922.39679 (86072316)	919.07037 (86072316)	905.21661 (86072316)	884.01953 (86072316)
30.0	771.89783 (86080416)	760.28876 (86062916)	739.62469 (86062916)	712.92029 (86062916)	715.73895 (86021116)
40.0	872.92450 (86080416)	782.90320 (86080416)	737.81226 (86030416)	741.61798 (86030416)	735.62836 (86030416)
50.0	892.91022 (86100416)	864.86285 (86100416)	827.97540 (86100416)	786.61719 (86100416)	788.87927 (86112016)
60.0	1443.87183 (86100416)	1369.48413 (86100416)	1285.62292 (86100416)	1199.20679 (86100416)	1114.37305 (86100416)
70.0	1292.47498 (86081816)	1259.68347 (86081816)	1211.73108 (86081816)	1155.37451 (86081816)	1095.19409 (86081816)
80.0	855.98706 (86022616)	798.20282 (86022616)	739.98724 (86022616)	684.03094 (86022616)	631.64020 (86022616)
90.0	809.61346 (86071916)	746.01489 (86071916)	684.30487 (86071916)	626.51666 (86071916)	600.17950 (86041616)
100.0	859.64948 (86071916)	802.31641 (86071916)	744.26221 (86071916)	688.10742 (86071916)	635.21558 (86071916)
110.0	1369.61401 (86042916)	1316.87952 (86042916)	1253.25037 (86042916)	1184.75378 (86042916)	1115.26685 (86042916)
120.0	1241.60657 (86042916)	1189.16101 (86042916)	1126.11401 (86042916)	1058.85803 (86042916)	991.33752 (86042916)
130.0	1248.07642 (86012816)	1226.75330 (86012816)	1187.97815 (86012816)	1138.79309 (86012816)	1084.14172 (86012816)
140.0	855.99170 (86042616)	781.77289 (86042616)	711.48352 (86042616)	646.89301 (86042616)	608.83881 (86090316)
150.0	1381.91699 (86101616)	1304.36926 (86101616)	1220.03284 (86101616)	1134.55127 (86101616)	1051.34546 (86101616)
160.0	1407.70215 (86101616)	1386.45581 (86101616)	1350.40039 (86101616)	1305.28748 (86101616)	1255.10364 (86101616)
170.0	1113.52844 (86110316)	1015.08997 (86110316)	921.56757 (86110316)	875.62292 (86012408)	919.26282 (86012408)
180.0	1306.96716 (86110316)	1254.17334 (86110316)	1192.80542 (86110316)	1127.80603 (86110316)	1062.35144 (86110316)
190.0	830.80414 (86102116)	781.28864 (86102116)	730.92023 (86102116)	682.03564 (86102116)	635.85199 (86102116)
200.0	1283.22290 (86120416)	1226.88110 (86120416)	1162.01819 (86120416)	1093.82166 (86120416)	1025.62744 (86120416)
210.0	955.28589 (86111316)	895.85645 (86111316)	836.54492 (86111316)	779.21783 (86111316)	772.38049 (86032716)
220.0	1141.39001 (86060516)	1125.90320 (86060516)	1098.82239 (86060516)	1063.66931 (86060516)	1023.29309 (86060516)
230.0	848.87018 (86102216)	846.77399 (86102216)	839.81744 (86102216)	829.33972 (86102216)	816.44855 (86102216)
240.0	888.02203 (86091516)	892.31067 (86033116)	916.94983 (86111416)	962.83722 (86111416)	998.41742 (86111416)
250.0	1098.60620 (86091516)	1057.30139 (86091516)	1010.54016 (86091516)	961.14020 (86091516)	911.08795 (86091516)
260.0	825.76825 (86121416)	804.00250 (86121416)	778.15265 (86121416)	749.74835 (86121416)	719.90405 (86121416)
270.0	795.10742 (86040416)	816.57892 (86040416)	826.88086 (86040416)	827.67535 (86040416)	820.76178 (86040416)
280.0	1124.68445 (86062316)	1090.88342 (86062316)	1052.46399 (86062316)	1011.36096 (86062316)	969.00433 (86062316)
290.0	969.42261 (86062316)	938.38312 (86062316)	904.46613 (86062316)	869.13037 (86062316)	833.39038 (86062316)
300.0	980.08032 (86040616)	892.07819 (86040616)	857.10620 (86030916)	846.95135 (86030916)	837.90741 (86122316)
310.0	981.06726 (86112516)	934.57983 (86112516)	886.20947 (86112516)	837.84088 (86112516)	790.67163 (86112516)
320.0	913.20721 (86112516)	847.75696 (86112516)	784.93616 (86112516)	725.98328 (86112516)	671.41791 (86112516)
330.0	993.03131 (86082516)	929.30585 (86082516)	866.45020 (86082516)	806.12360 (86082516)	749.23529 (86082516)
340.0	1351.32813 (86031216)	1321.54041 (86031216)	1281.82910 (86031216)	1235.84070 (86031216)	1186.26843 (86031216)
350.0	1111.89258 (86100916)	1033.58496 (86100916)	959.22162 (86100916)	890.13586 (86100916)	826.76178 (86100916)
360.0	1363.55444 (86112616)	1339.05640 (86112616)	1303.61084 (86112616)	1260.96899 (86112616)	1213.92212 (86112616)

** DELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	701.55292 (86113016)	711.99652 (86113016)	715.71143 (86113016)
20.0	857.94061 (86072316)	828.31122 (86072316)	796.72504 (86072316)
30.0	717.94263 (86021116)	713.84106 (86021116)	703.97845 (86021116)
40.0	722.66766 (86030416)	704.23193 (86030416)	680.49060 (86030416)
50.0	791.68365 (86112016)	786.74506 (86112016)	774.47461 (86112016)
60.0	1033.44739 (86100416)	957.61328 (86100416)	887.34729 (86100416)
70.0	1034.19348 (86081816)	974.28064 (86081816)	916.60742 (86081816)
80.0	583.32825 (86022616)	539.17169 (86022616)	536.85217 (86020716)
90.0	576.80127 (86070316)	571.87927 (86070316)	564.95367 (86070316)
100.0	586.19391 (86071916)	541.20679 (86071916)	500.16852 (86071916)
110.0	1047.18579 (86042916)	981.91687 (86042916)	920.21820 (86042916)
120.0	925.87244 (86042916)	863.73828 (86042916)	807.03271 (86012816)
130.0	1027.37500 (86012816)	970.68909 (86012816)	915.47363 (86012816)
140.0	588.40149 (86090316)	566.71759 (86090316)	546.27704 (86122916)
150.0	972.35345 (86101616)	898.68622 (86101616)	830.44415 (86101616)
160.0	1202.56531 (86101616)	1149.75696 (86101616)	1192.14514 (86111508)
170.0	946.97064 (86012408)	961.01666 (86012408)	963.77301 (86012408)
180.0	998.40991 (86110316)	937.14557 (86110316)	879.19031 (86110316)
190.0	619.47491 (86111324)	606.61597 (86111324)	608.09979 (86122616)
200.0	959.47589 (86120416)	896.53772 (86120416)	841.59369 (86020908)
210.0	766.46887 (86032716)	757.68127 (86032716)	743.02631 (86032716)
220.0	980.09027 (86060516)	935.07739 (86060516)	888.60718 (86060516)
230.0	801.41492 (86102216)	792.04498 (86101916)	798.25946 (86050924)
240.0	1024.23645 (86111416)	1039.30371 (86111416)	1043.43848 (86111416)
250.0	861.72876 (86091516)	813.93365 (86091516)	768.23541 (86091516)
260.0	689.47626 (86121416)	664.56226 (86091016)	656.60925 (86091016)
270.0	807.83276 (86040416)	801.74896 (86051516)	803.07397 (86031008)
280.0	926.48895 (86062316)	883.90308 (86062316)	841.08252 (86062316)
290.0	819.16290 (86030924)	818.41840 (86030924)	808.02600 (86030924)
300.0	853.26410 (86122316)	858.03912 (86122316)	852.91559 (86122316)
310.0	745.42542 (86112516)	702.50232 (86112516)	662.09210 (86112516)
320.0	621.34253 (86112516)	582.24506c(86083116)	558.55316c(86083116)
330.0	696.20630 (86082516)	651.14258 (86031308)	641.06232 (86031308)
340.0	1135.17603 (86031216)	1083.63806 (86031216)	1032.11670 (86031216)
350.0	797.75952 (86052008)	789.98108 (86052008)	777.23975 (86052008)
360.0	1164.67712 (86112616)	1113.12341 (86112616)	1061.87756 (86112616)

**MODELING OPTIONS USED: CONC   RURAL   FLAT   DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	389.21826	(86051116)	15.24	0.00	352.29568c	(86082316)
30.48	0.00	330.07516c	(86082316)	45.72	0.00	293.04819c	(86082316)
60.96	0.00	243.62285c	(86082316)	76.20	0.00	187.61575c	(86082316)
91.44	0.00	134.99295c	(86082316)	106.68	0.00	142.32684	(86111324)
121.92	0.00	141.05029	(86032216)	137.16	0.00	217.05721	(86032216)
152.40	0.00	139.36569	(86032216)	167.64	0.00	107.23518	(86011116)
182.88	0.00	136.65936	(86011116)	198.12	0.00	110.64213	(86042316)
213.36	0.00	120.04622	(86042316)	213.36	15.24	107.05627	(86042616)
213.36	30.48	99.04636	(86042616)	213.36	45.72	90.62361	(86022516)
213.36	60.96	120.88385	(86012724)	213.36	76.20	136.80106	(86012724)
213.36	91.44	90.21629	(86012724)	213.36	106.68	66.63586	(86012724)
213.36	121.92	64.81264	(86012724)	213.36	137.16	62.61386	(86012724)
213.36	152.40	71.05780	(86022716)	213.36	167.64	85.03729	(86022716)
213.36	182.88	113.83447	(86060816)	213.36	198.12	157.28479	(86060816)
213.36	213.36	202.40253	(86060816)	213.36	220.98	226.33618	(86060816)
198.12	220.98	234.45854	(86060816)	182.88	220.98	226.80139	(86060816)
167.64	220.98	205.07106	(86071316)	152.40	220.98	233.15746	(86071316)
137.16	220.98	248.50334	(86071316)	121.92	220.98	253.11069	(86071316)
106.68	220.98	258.11713	(86061416)	91.44	220.98	307.46613	(86080516)
76.20	220.98	338.16730	(86080516)	60.96	220.98	346.15167	(86080516)
45.72	220.98	338.84906	(86080516)	30.48	220.98	397.74115	(86071716)
15.24	220.98	468.73093	(86071716)	0.00	220.98	531.92999	(86071716)
0.00	213.36	500.43253	(86071716)	0.00	198.12	452.42294	(86062416)
0.00	182.88	398.92194	(86062416)	0.00	167.64	340.62695	(86062416)
0.00	152.40	288.42563	(86043016)	0.00	137.16	261.65427	(86043016)
0.00	121.92	229.44492	(86043016)	0.00	106.68	201.90088	(86051716)
0.00	91.44	215.60432	(86051716)	0.00	76.20	244.98061	(86051716)
0.00	60.96	278.46341	(86051716)	0.00	45.72	307.38184	(86051716)
0.00	30.48	329.28650	(86051716)	0.00	15.24	345.09204	(86051716)

MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

** CONC OF MC_8 IN MICROGRAMS/M**3 **

RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,	YR) OF	TYPE	RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,	YR) OF	TYPE
1.	1514.55920	(86100416) AT (	582.99,	385.64)	GP	26.	1372.27295	(86112616) AT (	106.68,	710.64)	GP
2.	1497.76831	(86100416) AT (	626.30,	410.64)	GP	27.	1370.84949	(86071316) AT (	158.77,	406.08)	GP
3.	1479.02783	(86040616) AT (	-196.43,	285.64)	GP	28.	1370.70459	(86101616) AT (	294.79,	-406.19)	GP
4.	1477.02197	(86101616) AT (	381.68,	-365.67)	GP	29.	1369.61401	(86042916) AT (	717.48,	-111.67)	GP
5.	1476.61426	(86071316) AT (	106.68,	460.64)	GP	30.	1369.48413	(86100416) AT (	712.90,	460.64)	GP
6.	1471.13745	(86100416) AT (	539.69,	360.64)	GP	31.	1366.36743	(86031216) AT (	-98.53,	674.46)	GP
7.	1463.76477	(86101616) AT (	356.68,	-322.37)	GP	32.	1363.55444	(86112616) AT (	106.68,	760.64)	GP
8.	1456.10742	(86040616) AT (	-239.73,	310.64)	GP	33.	1362.81445	(86110316) AT (	193.50,	-381.76)	GP
9.	1443.87183	(86100416) AT (	669.60,	435.64)	GP	34.	1361.28955	(86100916) AT (	28.54,	553.80)	GP
10.	1443.84033	(86101616) AT (	406.68,	-408.98)	GP	35.	1360.46655	(86031216) AT (	-81.43,	627.47)	GP
11.	1430.84998	(86071316) AT (	106.68,	510.64)	GP	36.	1358.98547	(86112616) AT (	106.68,	660.64)	GP
12.	1429.48853c	(86082316) AT (	-68.32,	-192.47)	GP	37.	1353.55493	(86110316) AT (	106.68,	-439.36)	GP
13.	1425.35974	(86040616) AT (	-153.13,	260.64)	GP	38.	1353.22327	(86042916) AT (	576.53,	-60.37)	GP
14.	1418.38379	(86071316) AT (	106.68,	410.64)	GP	39.	1351.69409c	(86082316) AT (	-43.32,	-149.17)	GP
15.	1407.70215	(86101616) AT (	328.99,	-500.16)	GP	40.	1351.32813	(86031216) AT (	-115.63,	721.44)	GP
[illegible]	1406.06189	(86101616) AT (	311.89,	-453.18)	GP	41.	1350.40039	(86101616) AT (	363.20,	-594.13)	GP
17.	1402.56763	(86042916) AT (	623.51,	-77.47)	GP	42.	1345.89526	(86100916) AT (	37.22,	504.56)	GP
18.	1402.44397	(86042916) AT (	670.50,	-94.57)	GP	43.	1345.89331	(86100416) AT (	496.39,	335.64)	GP
19.	1394.11548	(86071316) AT (	167.46,	455.32)	GP	44.	1343.71948	(86110316) AT (	106.68,	-489.36)	GP
20.	1386.45581	(86101616) AT (	346.09,	-547.14)	GP	45.	1339.05640	(86112616) AT (	106.68,	810.64)	GP
21.	1384.87476c	(86082316) AT (	-93.32,	-235.77)	GP	46.	1336.51001	(86120416) AT (	-81.43,	-406.19)	GP
22.	1384.34314	(86101616) AT (	331.68,	-279.07)	GP	47.	1333.89294	(86071316) AT (	106.68,	560.64)	GP
23.	1381.91699	(86101616) AT (	431.68,	-452.28)	GP	48.	1327.87720	(86100916) AT (	19.86,	603.04)	GP
24.	1381.43127	(86040616) AT (	-283.03,	335.64)	GP	49.	1326.09290	(86031216) AT (	-64.33,	580.49)	GP
25.	1380.43872	(86110316) AT (	184.82,	-332.52)	GP	50.	1323.34839	(86120416) AT (	-98.53,	-453.18)	GP

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF MC_8 IN MICROGRAMS/M**3 **

```
                                                 DATE                                                          NETWORK
GROUP ID                          AVERAGE CONC   (YYMMDDHH)        RECEPTOR  (XR, YR, ZELEV, ZFLAG)     OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS    1514.55920  ON 86100416: AT (    582.99,     385.64,      0.00,      0.00)  GP    POLAR_1
```

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

APPENDIX E

ISCST2 OUTPUT LISTING

METHYLENE CHLORIDE 24-HOUR AVERAGE EMISSIONS

RUN: FMXMC24

```
ISCST2 - (DATED 93109)

IBM-PC VERSION (2.11 ) ISCST2F
(C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  4/25/1995 at 12:32:00


*** TRINITY SOURCE FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXSRC.PNT
*** TRINITY DOWNWASH FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXREC.REC
CO STARTING
CO TITLEONE Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks
CO TITLETWO Methlyene Chloride 24-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 24
CO POLLUTID MC_24
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79      0.00
SO SRCPARAM FOAMLINE 44.09920      38.10     299.82    24.5307      0.857
SO LOCATION LONGBUN POINT     152.40      17.07      0.00
SO SRCPARAM LONGBUN 25.72458      38.10     299.82    24.5307      0.857
SO LOCATION EXFAN_3 POINT     108.51      97.23      0.00
SO SRCPARAM EXFAN_3 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_4 POINT     108.51     110.64      0.00
SO SRCPARAM EXFAN_4 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_5 POINT     108.51     119.79      0.00
SO SRCPARAM EXFAN_5 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_6 POINT     108.51     135.64      0.00
SO SRCPARAM EXFAN_6 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_7 POINT     108.51     152.71      0.00
SO SRCPARAM EXFAN_7 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_8 POINT     108.51     168.86      0.00
SO SRCPARAM EXFAN_8 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_9 POINT     108.51     183.79      0.00
SO SRCPARAM EXFAN_9 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_10 POINT     108.51     192.94      0.00
SO SRCPARAM EXFAN_10 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_11 POINT     147.52      97.23      0.00
SO SRCPARAM EXFAN_11 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_12 POINT     147.52     110.64      0.00
SO SRCPARAM EXFAN_12 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_13 POINT     147.52     119.79      0.00
SO SRCPARAM EXFAN_13 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_14 POINT     147.52     135.64      0.00
SO SRCPARAM EXFAN_14 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_15 POINT     147.52     152.71      0.00
SO SRCPARAM EXFAN_15 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_16 POINT     147.52     168.86      0.00
SO SRCPARAM EXFAN_16 0.232214      16.15     299.82    24.6109      1.105
SO LOCATION EXFAN_17 POINT     147.52     183.79      0.00
SO SRCPARAM EXFAN_17 0.232214      16.15     299.82    24.6109      1.105
```

```
SO LOCATION EXFAN_18 POINT      147.52      192.94        0.00
SO SRCPARAM EXFAN_18 0.232214       16.15      299.82     24.6109      1.105
SO LOCATION EXFAN_19 POINT      182.88      102.56        0.00
SO SRCPARAM EXFAN_19 0.232214       16.15      299.82     24.6109      1.105
SO BUILDHGT FOAMLINE    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     12.19
SO BUILDHGT FOAMLINE    12.19     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT FOAMLINE    12.19     12.19     12.19     12.19     12.19     12.19
SO BUILDHGT FOAMLINE    12.19     12.19     15.24     15.24     15.24     15.24
SO BUILDWID  FOAMLINE      80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  FOAMLINE      39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID  FOAMLINE      37.02     33.83     93.48     88.29     80.42     12.19
SO BUILDWID  FOAMLINE      18.62     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  FOAMLINE      39.97     39.64     38.10     39.64     39.97     39.09
SO BUILDWID  FOAMLINE      37.02     33.83     93.48     88.29     80.42     70.11
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDHGT LONGBUN    15.24     15.24     15.24     15.24     15.24     15.24
SO BUILDWID  LONGBUN       80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  LONGBUN       85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID  LONGBUN       95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDWID  LONGBUN       80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  LONGBUN       85.56     76.71     65.53     76.71     85.56     91.81
SO BUILDWID  LONGBUN       95.26     95.83     93.48     88.29     80.42     70.11
SO BUILDHGT EXFAN_3    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_3    12.19     12.19     12.19     15.24     15.24     15.24
SO BUILDHGT EXFAN_3    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDHGT EXFAN_3    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_3    12.19     12.19     12.19     15.24     15.24     15.24
SO BUILDHGT EXFAN_3    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID  EXFAN_3      116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_3      101.55    104.18    103.63     76.71     85.56     91.81
SO BUILDWID  EXFAN_3       95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDWID  EXFAN_3      116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_3       39.97     39.64     38.10     76.71     85.56     91.81
SO BUILDWID  EXFAN_3       95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_4    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_4    10.67     12.19     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_4    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDHGT EXFAN_4    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_4    10.67     12.19     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_4    15.24     15.24     15.24     15.24     15.24     10.67
SO BUILDWID  EXFAN_4      116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_4      146.50    104.18    103.63    114.23     85.56     91.81
SO BUILDWID  EXFAN_4       95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDWID  EXFAN_4      116.96    132.83    144.67    152.11    154.93    153.04
SO BUILDWID  EXFAN_4      146.50     39.64     38.10     39.64     85.56     91.81
SO BUILDWID  EXFAN_4       95.26     95.83     93.48     88.29     80.42     97.54
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     12.19     12.19     15.24     15.24
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     12.19     12.19     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     10.67     10.67     10.67     10.67
SO BUILDHGT EXFAN_5    10.67     10.67     12.19     12.19     15.24     15.24
```

```
SO BUILDHGT EXFAN_5    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_5    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_5    146.50   135.51   103.63   114.23    85.56    91.81
SO BUILDWID  EXFAN_5    150.26   148.19   141.62   101.32    87.04    97.54
SO BUILDWID  EXFAN_5    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_5    146.50   135.51    38.10    39.64    85.56    91.81
SO BUILDWID  EXFAN_5     95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    12.19    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_6    10.67    10.67    10.67    12.19    12.19    15.24
SO BUILDHGT EXFAN_6    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_6    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_6    146.50   135.51   120.40   114.23   140.77   147.76
SO BUILDWID  EXFAN_6    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_6    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_6    146.50   135.51   120.40    39.64    39.97    91.81
SO BUILDWID  EXFAN_6     95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_7    15.24    15.24    15.24    15.24    15.24    10.67
SO BUILDWID  EXFAN_7    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_7    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7     95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_8    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_8    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_9    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_9    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
```

```
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_10    10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDWID  EXFAN_10    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_10    146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_10    150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_10    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_10    146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_10    150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_11    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_11     80.42   88.29   93.48   95.83   95.26   91.81
SO BUILDWID  EXFAN_11     85.56  104.18  103.63   76.71   85.56   91.81
SO BUILDWID  EXFAN_11     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDWID  EXFAN_11     80.42   88.29   93.48   95.83   95.26   91.81
SO BUILDWID  EXFAN_11     85.56   39.64   38.10   76.71   85.56   91.81
SO BUILDWID  EXFAN_11     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   12.19
SO BUILDHGT EXFAN_12    12.19   12.19   12.19   12.19   12.19   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   12.19
SO BUILDHGT EXFAN_12    12.19   12.19   12.19   12.19   12.19   15.24
SO BUILDHGT EXFAN_12    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_12     80.42   88.29   93.48   95.83   95.26   39.09
SO BUILDWID  EXFAN_12     39.97   39.64  103.63  114.23   39.97   91.81
SO BUILDWID  EXFAN_12     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDWID  EXFAN_12     80.42   88.29   93.48   95.83   95.26   39.09
SO BUILDWID  EXFAN_12     39.97   39.64   38.10   39.64   39.97   91.81
SO BUILDWID  EXFAN_12     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   10.67   10.67
SO BUILDHGT EXFAN_13    10.67   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   10.67   10.67
SO BUILDHGT EXFAN_13    10.67   12.19   12.19   12.19   12.19   12.19
SO BUILDHGT EXFAN_13    15.24   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_13     80.42   88.29   93.48   95.83  154.93  153.04
SO BUILDWID  EXFAN_13    146.50   39.64  103.63  114.23  121.36  124.80
SO BUILDWID  EXFAN_13     95.26   95.83   93.48   88.29   87.04   70.11
SO BUILDWID  EXFAN_13     80.42   88.29   93.48   95.83  154.93  153.04
SO BUILDWID  EXFAN_13    146.50   39.64   38.10   39.64   39.97   39.09
SO BUILDWID  EXFAN_13     95.26   95.83   93.48   88.29   80.42   70.11
SO BUILDHGT EXFAN_14    15.24   15.24   15.24   10.67   10.67   10.67
SO BUILDHGT EXFAN_14    10.67   10.67   10.67   10.67   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   15.24   10.67   12.19   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   12.19   15.24   10.97   10.97   10.67
SO BUILDHGT EXFAN_14    10.67   10.67   10.67   10.67   12.19   12.19
SO BUILDHGT EXFAN_14    12.19   15.24   15.24   15.24   15.24   15.24
SO BUILDWID  EXFAN_14     80.42   88.29   93.48  152.11  154.93  153.04
SO BUILDWID  EXFAN_14    146.50  135.51  120.40  129.50  121.36  124.80
SO BUILDWID  EXFAN_14    124.45   95.83  141.62  101.32   87.04   70.11
SO BUILDWID  EXFAN_14     80.42   88.29   93.48   24.97   24.41  153.04
SO BUILDWID  EXFAN_14    146.50  135.51  120.40  129.50   39.97   39.09
```

```
SO BUILDWID  EXFAN_14     37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_15   15.24    15.24    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_15   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_15   12.19    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_15   12.19    12.19    10.67    10.97    10.97    10.97
SO BUILDHGT EXFAN_15   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_15   12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_15     80.42    88.29   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_15    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_15    124.45   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_15     80.42    88.29   144.67    24.97    24.41    23.11
SO BUILDWID  EXFAN_15    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_15     37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_16   12.19    12.19    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_16   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_16   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_16   10.67    10.67    10.67    10.67    10.97    10.97
SO BUILDHGT EXFAN_16   10.97    10.97    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_16   10.67    12.19    12.19    12.19    12.19    12.19
SO BUILDWID  EXFAN_16     80.42    88.29   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_16    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_16    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_16    116.96   132.83   144.67   152.11    24.41    23.11
SO BUILDWID  EXFAN_16     21.10    18.45   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_16    150.26    33.83    29.61    24.49    87.04    70.11
SO BUILDHGT EXFAN_17   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_17   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_17   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_17   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_17   10.97    10.97    10.97    10.97    10.97    10.67
SO BUILDHGT EXFAN_17   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_17    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_17    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_17    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_17    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_17     21.10    18.45    15.24    18.45    21.10   147.76
SO BUILDWID  EXFAN_17    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_18   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18   10.67    10.67    10.97    10.97    10.97    10.97
SO BUILDHGT EXFAN_18   10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_18    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_18    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_18    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_18    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_18    146.50   135.51    15.24    18.45    21.10    23.11
SO BUILDWID  EXFAN_18    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_19   15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19   15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19   12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19   15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19   15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19   12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_19     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19     85.56    39.64    38.10    39.64    39.97    39.09
```

```
SO BUILDWID  EXFAN_19      37.02     95.83     93.48     88.29     80.42     70.11
SO BUILDWID  EXFAN_19      80.42     88.29     93.48     95.83     95.26     91.81
SO BUILDWID  EXFAN_19      85.56     39.64     38.10     39.64     39.97     39.09
SO BUILDWID  EXFAN_19      37.02     95.83     93.48     88.29     80.42     70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
```

```
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 24 FIRST
OU MAXTABLE 24 50
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

```
*** ISCST2 - VERSION 93109 ***    *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks  ***        04/25/95
                                  *** Methlyene Chloride 24-hr Average Emissions                           ***        12:32:02
                                                                                                                      PAGE   1
**MODELING OPTIONS USED:  CONC    RURAL  FLAT         DFAULT

                                         ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:  24-HR

**This Run Includes:    19 Source(s);      1 Source Group(s); and    706 Receptor(s)

**The Model Assumes A Pollutant Type of:  MC_24

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =     10.00 ;    Decay Coef. =   0.0000      ;    Rot. Angle =      0.0
                 Emission Units = GRAMS/SEC                                  ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: D:\MODELDAT\ISCST2\FMXTEMP\FMXMC24.DAT  ;  **Output Print File: D:\MODELDAT\ISCST2\FMXTEMP\FMXMC24.LST
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.44099E+02	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
LONGBUN	0	0.25725E+02	152.4	17.1	0.0	38.10	299.82	24.53	0.86	YES	
EXFAN_3	0	0.23221E+00	108.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_4	0	0.23221E+00	108.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_5	0	0.23221E+00	108.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_6	0	0.23221E+00	108.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_7	0	0.23221E+00	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_8	0	0.23221E+00	108.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_9	0	0.23221E+00	108.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_10	0	0.23221E+00	108.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_11	0	0.23221E+00	147.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.23221E+00	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_13	0	0.23221E+00	147.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_14	0	0.23221E+00	147.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_15	0	0.23221E+00	147.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_16	0	0.23221E+00	147.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_17	0	0.23221E+00	147.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_18	0	0.23221E+00	147.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.23221E+00	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: LONGBUN

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	15.2,	76.7,	0	9	15.2,	65.5,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	15.2,	76.7,	0	27	15.2,	65.5,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	12.2,	101.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_5

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_6

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	12.2,	114.2,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_8

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_9

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_10

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_11

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_13

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_14

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	12.2,	124.5,	0	14	15.2,	95.8,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	15.2,	93.5,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_15

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	12.2,	124.5,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	10.7,	144.7,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_16

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	12.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	24.5,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_17

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_18

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	11.0,	23.1,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(	0.0,	0.0,	0.0,	0.0);	(	15.2,	0.0,	0.0,	0.0);
(	30.5,	0.0,	0.0,	0.0);	(	45.7,	0.0,	0.0,	0.0);
(	61.0,	0.0,	0.0,	0.0);	(	76.2,	0.0,	0.0,	0.0);
(	91.4,	0.0,	0.0,	0.0);	(	106.7,	0.0,	0.0,	0.0);
(	121.9,	0.0,	0.0,	0.0);	(	137.2,	0.0,	0.0,	0.0);
(	152.4,	0.0,	0.0,	0.0);	(	167.6,	0.0,	0.0,	0.0);
(	182.9,	0.0,	0.0,	0.0);	(	198.1,	0.0,	0.0,	0.0);
(	213.4,	0.0,	0.0,	0.0);	(	213.4,	15.2,	0.0,	0.0);
(	213.4,	30.5,	0.0,	0.0);	(	213.4,	45.7,	0.0,	0.0);
(	213.4,	61.0,	0.0,	0.0);	(	213.4,	76.2,	0.0,	0.0);
(	213.4,	91.4,	0.0,	0.0);	(	213.4,	106.7,	0.0,	0.0);
(	213.4,	121.9,	0.0,	0.0);	(	213.4,	137.2,	0.0,	0.0);
(	213.4,	152.4,	0.0,	0.0);	(	213.4,	167.6,	0.0,	0.0);
(	213.4,	182.9,	0.0,	0.0);	(	213.4,	198.1,	0.0,	0.0);
(	213.4,	213.4,	0.0,	0.0);	(	213.4,	221.0,	0.0,	0.0);
(	198.1,	221.0,	0.0,	0.0);	(	182.9,	221.0,	0.0,	0.0);
(	167.6,	221.0,	0.0,	0.0);	(	152.4,	221.0,	0.0,	0.0);
(	137.2,	221.0,	0.0,	0.0);	(	121.9,	221.0,	0.0,	0.0);
(	106.7,	221.0,	0.0,	0.0);	(	91.4,	221.0,	0.0,	0.0);
(	76.2,	221.0,	0.0,	0.0);	(	61.0,	221.0,	0.0,	0.0);
(	45.7,	221.0,	0.0,	0.0);	(	30.5,	221.0,	0.0,	0.0);
(	15.2,	221.0,	0.0,	0.0);	(	0.0,	221.0,	0.0,	0.0);
(	0.0,	213.4,	0.0,	0.0);	(	0.0,	198.1,	0.0,	0.0);
(	0.0,	182.9,	0.0,	0.0);	(	0.0,	167.6,	0.0,	0.0);
(	0.0,	152.4,	0.0,	0.0);	(	0.0,	137.2,	0.0,	0.0);
(	0.0,	121.9,	0.0,	0.0);	(	0.0,	106.7,	0.0,	0.0);
(	0.0,	91.4,	0.0,	0.0);	(	0.0,	76.2,	0.0,	0.0);
(	0.0,	61.0,	0.0,	0.0);	(	0.0,	45.7,	0.0,	0.0);
(	0.0,	30.5,	0.0,	0.0);	(	0.0,	15.2,	0.0,	0.0);

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
LONGBUN	121.9	0.0	34.93
LONGBUN	137.2	0.0	22.88
LONGBUN	152.4	0.0	17.07
LONGBUN	167.6	0.0	22.88
LONGBUN	182.9	0.0	34.93
EXFAN_10	121.9	221.0	31.08
EXFAN_10	106.7	221.0	28.10
EXFAN_18	152.4	221.0	28.46
EXFAN_18	137.2	221.0	29.89
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815   UPPER AIR STATION NO.: 12842
NAME: ORLANDO   NAME: TAMPA
YEAR: 1986   YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	55.56037c(86071324)	101.85667c(86071324)	147.00342c(86071324)	175.07025c(86071324)	185.63440c(86071324)
20.0	45.87034c(86071324)	78.26346c(86071324)	104.51109c(86071324)	113.94444c(86071324)	109.83424c(86071324)
30.0	34.85361c(86060824)	60.92694c(86060824)	79.76337c(86060824)	87.28581c(86053124)	93.26400c(86053124)
40.0	30.97959c(86060824)	49.69524c(86053124)	87.17253c(86053124)	108.92686c(86053124)	136.50319 (86080424)
50.0	23.36134 (86022724)	49.02425c(86053124)	76.21497c(86053124)	97.47431 (86072624)	127.29771 (86072624)
60.0	22.24252 (86022724)	35.45542c(86053124)	62.84785c(86071524)	92.20586c(86072024)	122.36773c(86072024)
70.0	19.37024 (86011924)	32.14171c(86071524)	55.85813c(86072024)	96.78310c(86072024)	129.53244c(86072024)
80.0	23.27545 (86012724)	27.37317c(86071524)	49.56086c(86071524)	74.39472 (86091224)	102.66043 (86091224)
90.0	24.25759 (86012724)	27.73889 (86012724)	48.58381c(86071524)	80.29446c(86071524)	102.28485c(86071524)
100.0	26.16431 (86012724)	28.65858 (86012724)	35.34792c(86050824)	68.25157c(86071524)	92.85957c(86071524)
110.0	24.61763 (86012724)	27.29133 (86042924)	44.18016 (86042924)	72.26462c(86050824)	106.42160 (86042924)
120.0	18.96981c(86012824)	31.07838 (86042624)	55.11917 (86042624)	86.92498c(86090224)	112.21865 (86042824)
130.0	19.84970c(86012824)	28.53890 (86042624)	55.48365 (86042624)	93.84641 (86042624)	128.41078 (86042624)
140.0	26.09142 (86011124)	28.71069 (86032124)	40.97551 (86050324)	67.08604 (86042824)	99.74294 (86042824)
150.0	37.44098 (86011124)	42.74272 (86011124)	50.37821 (86101624)	82.18173 (86101624)	116.27995 (86101624)
160.0	26.74447 (86011124)	34.57371c(86082324)	60.89515 (86110324)	84.57645 (86110324)	100.04605 (86110324)
170.0	33.02415 (86032224)	48.59612c(86082324)	78.01653c(86082324)	103.14156 (86110324)	137.10954 (86110324)
180.0	24.99319c(86111324)	52.03496c(86082324)	84.40516c(86082324)	114.66895c(86082324)	131.12253c(86082324)
190.0	34.58327c(86111324)	58.83273c(86082324)	85.47725c(86082324)	106.95098c(86082324)	118.16646c(86082324)
200.0	45.57975c(86111324)	76.51036c(86082324)	107.17382c(86082324)	126.48335c(86082324)	135.36617c(86111324)
210.0	48.52880c(86082324)	85.96761c(86082324)	120.42270c(86082324)	143.95493c(86082324)	152.19318c(86082324)
220.0	41.81482c(86082324)	74.74484c(86082324)	103.48450c(86082324)	123.69124c(86082324)	133.74594c(86082324)
230.0	50.86782c(86051724)	77.07717c(86051124)	108.30008 (86062624)	131.60678 (86062624)	142.25127 (86062624)
240.0	55.09605c(86051724)	73.22336c(86051724)	107.33964 (86062624)	132.52864 (86062624)	145.19907 (86062624)
250.0	55.31497c(86051724)	75.54292c(86051724)	97.29888 (86062624)	116.96647 (86062624)	128.36505 (86062624)
260.0	50.77473c(86051724)	70.65235c(86051324)	101.97304c(86051324)	123.00665c(86051324)	134.64575c(86051324)
270.0	51.14618c(86051724)	77.35516 (86043024)	102.03886c(86051324)	122.50985c(86051324)	133.59760c(86051324)
280.0	63.46465 (86043024)	97.93747 (86043024)	117.16940 (86043024)	123.34377 (86043024)	136.24449 (86062324)
290.0	64.53899c(86051724)	102.18845 (86040624)	135.02544 (86040624)	151.71022 (86040624)	156.78134 (86040624)
300.0	67.00979c(86051724)	110.35693 (86040624)	151.96704 (86040624)	176.68732 (86040624)	187.28772 (86040624)
310.0	63.33781c(86051724)	106.18172 (86040624)	143.38708 (86040624)	159.90533 (86040624)	161.01295 (86040624)
320.0	61.31618 (86071724)	101.62846c(86052924)	131.44807c(86052924)	141.28874c(86052924)	135.98943c(86052924)
330.0	54.62953 (86071724)	86.68478c(86052924)	103.42849c(86052924)	119.99258c(86082524)	133.83002c(86082524)
340.0	57.98057 (86080524)	82.82822 (86080524)	103.66777c(86082724)	122.93308c(86082724)	133.21082 (86031224)
350.0	60.21321 (86080524)	92.60868 (86080524)	118.93644c(86071324)	139.25653c(86071324)	146.69107c(86071324)
360.0	56.81026c(86071324)	101.24566c(86071324)	145.92085c(86071324)	175.40163c(86071324)	189.20056c(86071324)

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION	DISTANCE (METERS)				
(DEGREES)	400.00	450.00	500.00	550.00	600.00
10.0	184.48569c(86071324)	177.66129c(86071324)	168.33833c(86071324)	158.31200c(86071324)	148.79144c(86071324)
20.0	113.28397c(86010224)	118.64873c(86010224)	119.54015c(86010224)	118.07236 (86080224)	126.04975 (86072324)
30.0	102.24459 (86080424)	109.21805 (86080424)	111.89437 (86080424)	112.92631c(86081924)	118.62038c(86081924)
40.0	155.24364 (86080424)	162.50734 (86080424)	162.33612 (86080424)	156.59705 (86080424)	147.88954 (86080424)
50.0	144.03011 (86072624)	149.44510 (86072624)	147.88605 (86072624)	141.88722 (86072624)	133.91402 (86072624)
60.0	141.61281c(86072024)	151.77225 (86100424)	166.88014 (86100424)	173.02678 (86100424)	172.42799 (86100424)
70.0	147.55057c(86072024)	165.93016c(86081824)	192.46080c(86081824)	209.10349c(86081824)	217.41370c(86081824)
80.0	117.08639 (86091224)	121.61725c(86081824)	133.27142c(86081824)	138.17389c(86081824)	138.67236c(86081824)
90.0	120.64960c(86071924)	138.42462c(86071924)	148.65266c(86071924)	152.69991c(86071924)	152.49356c(86071924)
100.0	116.53101c(86071924)	132.70654c(86071924)	142.52744c(86071924)	147.05592c(86071924)	147.87634c(86071924)
110.0	139.27866 (86042924)	164.38148 (86042924)	180.86865 (86042924)	189.64305 (86042924)	192.65807 (86042924)
120.0	136.82391c(86052224)	156.26820c(86052224)	166.77840c(86052224)	170.54689 (86042924)	174.51183 (86042924)
130.0	150.56459 (86042624)	159.93100 (86042624)	160.02187 (86042624)	168.55869c(86012824)	176.16460c(86012824)
140.0	123.03412 (86042824)	135.96329 (86042824)	140.73149 (86042824)	140.37047 (86042624)	137.79933 (86042624)
150.0	145.28554 (86101624)	165.66678 (86101624)	176.95543 (86101624)	180.69896 (86101624)	178.83983 (86101624)
160.0	124.82401 (86101624)	153.01511 (86101624)	176.67613 (86101624)	196.16187 (86101624)	211.70418 (86101624)
170.0	160.45055 (86110324)	172.93742 (86110324)	176.11568 (86110324)	173.63304 (86110324)	167.44540 (86110324)
180.0	132.14314c(86082324)	144.47597 (86110324)	157.65581 (86110324)	165.74168 (86110324)	169.79544 (86110324)
190.0	119.10469c(86082324)	112.12966c(86082324)	108.64734 (86102124)	109.05787 (86102124)	107.32657 (86102124)
200.0	143.29358c(86111324)	144.81842c(86111324)	149.39372 (86120424)	152.61397 (86120424)	151.21733 (86120424)
210.0	149.95950c(86111324)	156.66183c(86111324)	159.28929c(86111324)	158.78192c(86111324)	156.13696c(86111324)
220.0	134.82683c(86082324)	142.93343 (86060524)	155.94745 (86060524)	164.96161 (86060524)	170.50012 (86060524)
230.0	144.41762 (86062624)	140.97180 (86062624)	135.55258c(86051124)	129.75044c(86051124)	128.52174 (86010924)
240.0	147.66762 (86062624)	143.45348 (86062624)	140.04671 (86091524)	135.00667 (86091524)	127.49316 (86091524)
250.0	141.70226 (86091524)	150.23099 (86091524)	154.59055 (86091524)	155.59715 (86091524)	154.09660 (86091524)
260.0	139.93988c(86051324)	140.04230c(86051324)	136.99197c(86051324)	132.29935c(86051324)	126.91828c(86051324)
270.0	138.14896c(86051324)	137.44234c(86051324)	133.81522c(86051324)	128.81038c(86051324)	123.32471c(86051324)
280.0	150.08302 (86062324)	158.32251 (86062324)	162.12509 (86062324)	162.58211 (86062324)	160.60800 (86062324)
290.0	154.65794 (86040624)	148.11601 (86040624)	139.72710 (86040624)	137.32373 (86062324)	136.25554 (86062324)
300.0	188.00044 (86040624)	181.54720 (86040624)	171.35493 (86040624)	160.48564 (86030924)	171.03204 (86030924)
310.0	153.96880 (86040624)	142.08629 (86040624)	134.02997c(86100324)	131.14406c(86100324)	126.09286c(86100324)
320.0	130.05159 (86081124)	134.50310 (86081124)	134.27618 (86081124)	131.12750 (86081124)	126.34693 (86081124)
330.0	141.12970c(86082524)	142.87305c(86082524)	140.37665c(86082524)	150.40802 (86031324)	162.33328 (86031324)
340.0	157.54929 (86031224)	175.91023 (86031224)	188.06226 (86031224)	194.69640 (86031224)	196.84816 (86031224)
350.0	153.51379 (86100924)	157.34477 (86100924)	156.41151 (86100924)	152.84171 (86100924)	148.02983 (86100924)
360.0	192.23102c(86071324)	189.70242c(86071324)	184.05286c(86071324)	177.02625c(86071324)	169.92856c(86071324)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	147.28722 (86082024)	157.44051 (86082024)	165.55409 (86082024)	171.71819 (86082024)	176.10085 (86082024)
20.0	133.54170 (86072324)	138.17868 (86072324)	140.39281 (86072324)	140.71571 (86072324)	139.58357 (86072324)
30.0	121.29885c(86081924)	121.58787c(86081924)	120.08604c(86081924)	117.32069c(86081924)	113.71882c(86081924)
40.0	143.02965 (86072824)	137.46234 (86072824)	131.07021 (86072824)	125.48031 (86070224)	124.94184 (86070224)
50.0	125.48349 (86072624)	117.34436 (86072624)	109.79641 (86072624)	111.36689 (86112024)	115.82697 (86112024)
60.0	167.53583 (86100424)	160.13780 (86100424)	151.45729 (86100424)	142.29460 (86100424)	133.15036 (86100424)
70.0	219.68213c(86081824)	217.85995c(86081824)	213.41753c(86081824)	207.39177c(86081824)	200.48509c(86081824)
80.0	136.80406c(86081824)	133.79329c(86081824)	130.27853c(86081824)	126.55519c(86081824)	122.74473c(86081824)
90.0	149.84581c(86071924)	145.95995c(86071924)	141.61636c(86071924)	137.32399c(86071924)	133.30914c(86071924)
100.0	146.31125c(86071924)	143.20897c(86071924)	139.11237c(86071924)	134.37733c(86071924)	129.24951c(86071924)
110.0	191.77039 (86042924)	188.36449 (86042924)	183.30444 (86042924)	177.40491 (86042924)	171.06500 (86042924)
120.0	173.27284 (86042924)	168.57726 (86042924)	161.77293 (86042924)	153.81432 (86042924)	145.34846 (86042924)
130.0	178.86432c(86012824)	178.00917c(86012824)	174.72435c(86012824)	169.85143c(86012824)	164.00400c(86012824)
140.0	133.36577 (86042624)	128.08469 (86042624)	122.51452 (86042624)	116.94805 (86042624)	111.53008 (86042624)
150.0	173.24353 (86101624)	165.37749 (86101624)	156.29433 (86101624)	146.71419 (86101624)	137.10960 (86101624)
160.0	223.90022 (86101624)	233.20280 (86101624)	239.95610 (86101624)	244.46034 (86101624)	246.99931 (86101624)
170.0	159.42375 (86110324)	165.36879 (86120524)	178.22339 (86120524)	187.62172 (86120524)	193.84846 (86120524)
180.0	171.07086 (86110324)	170.41965 (86110324)	168.40855 (86110324)	172.98907 (86122824)	182.05566 (86122824)
190.0	104.48763 (86102124)	101.14850 (86102124)	99.34850c(86111324)	97.49444c(86111324)	99.88276c(86122624)
200.0	146.76967 (86120424)	140.50847 (86120424)	133.31447 (86120424)	131.25850 (86102824)	136.70152 (86102824)
210.0	152.00459c(86111324)	146.84314c(86111324)	141.01526c(86111324)	134.79314c(86111324)	128.37917c(86111324)
220.0	173.12691 (86060524)	173.37611 (86060524)	171.73834 (86060524)	170.20036 (86010824)	174.67561 (86010824)
230.0	143.77376 (86010924)	156.21533 (86010924)	165.83379 (86010924)	172.83781 (86010924)	177.52766 (86010924)
240.0	129.37837 (86010924)	139.70329 (86010924)	148.06476 (86010924)	154.57997 (86010924)	159.42223 (86010924)
250.0	150.85799 (86091524)	146.51540 (86091524)	141.55528 (86091524)	136.32928 (86091524)	131.07744 (86091524)
260.0	121.42855c(86051324)	116.15450c(86051324)	111.26315c(86051324)	106.82650c(86051324)	106.36222c(86091024)
270.0	118.05250 (86051624)	119.22440 (86051624)	120.58371 (86051524)	122.00550 (86051524)	122.48221 (86051524)
280.0	156.93172 (86062324)	152.11279 (86062324)	146.57658 (86062324)	140.64311 (86062324)	134.53889 (86062324)
290.0	134.35873 (86062324)	132.63609 (86052624)	130.05443 (86052624)	126.86044 (86052624)	125.94155 (86030924)
300.0	178.28847 (86030924)	182.62309 (86030924)	184.49586 (86030924)	184.39687 (86030924)	182.82353 (86030924)
310.0	119.84199c(86100324)	126.89438 (86122324)	132.52881 (86122324)	136.34557 (86122324)	138.58162 (86122324)
320.0	120.79566 (86081124)	115.01321 (86081124)	109.31853 (86081124)	103.88702 (86081124)	98.80438 (86081124)
330.0	172.19728 (86031324)	179.91151 (86031324)	185.54893 (86031324)	189.33333 (86031324)	191.64348 (86031324)
340.0	195.57593 (86031224)	191.81635 (86031224)	186.33867 (86031224)	179.74464 (86031224)	172.48967 (86031224)
350.0	142.78542 (86100924)	137.53423 (86100924)	132.47035 (86100924)	127.66232 (86100924)	123.12165 (86100924)
360.0	163.28110c(86071324)	159.86853 (86112624)	157.23924 (86112624)	154.70735 (86082024)	164.13890 (86082024)

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	178.91353 (86082024)	179.88495 (86082024)	179.60182 (86082024)
20.0	137.37213 (86072324)	134.26016 (86072324)	132.47954 (86011024)
30.0	110.18386 (86071024)	110.26388 (86071024)	109.99041 (86071024)
40.0	123.37366 (86070224)	121.07886 (86070224)	117.99783 (86070224)
50.0	119.01730 (86112024)	121.08447 (86112024)	121.93604 (86112024)
60.0	124.32203 (86100424)	115.97645 (86100424)	108.17849 (86100424)
70.0	193.16055c(86081824)	185.71640c(86081824)	178.34023c(86081824)
80.0	118.89301c(86081824)	115.01925c(86081824)	111.13718c(86081824)
90.0	129.69093c(86071924)	126.50230c(86071924)	123.72861c(86071924)
100.0	123.90491c(86071924)	118.47368c(86071924)	113.05337c(86071924)
110.0	164.57899 (86042924)	158.11237 (86042924)	151.78955 (86042924)
120.0	136.80235 (86042924)	133.39671 (86022024)	132.94292 (86022024)
130.0	157.63097c(86012824)	151.01295c(86012824)	144.32401c(86012824)
140.0	108.11529 (86032124)	110.07616 (86122924)	113.20330 (86122924)
150.0	127.77665 (86101624)	122.35919 (86032124)	121.24368 (86032124)
160.0	247.84688 (86101624)	247.22655 (86101624)	245.45540 (86101624)
170.0	197.35126 (86120524)	198.60835 (86120524)	197.93709 (86120524)
180.0	188.69978 (86122824)	193.05244 (86122824)	195.16173 (86122824)
190.0	105.75274c(86122624)	110.47982c(86122624)	113.75773c(86122624)
200.0	141.03203 (86102824)	144.36028 (86102824)	146.08055 (86102824)
210.0	123.46067 (86101924)	122.24488 (86101924)	123.75665 (86010724)
220.0	177.24992 (86010824)	178.08246 (86010824)	176.83656 (86010824)
230.0	180.26094 (86010924)	181.18013 (86010924)	179.93315 (86010924)
240.0	162.80098 (86010924)	164.54182 (86010924)	164.55099 (86010924)
250.0	125.95400 (86091524)	120.97128 (86091524)	116.08880 (86091524)
260.0	107.99807c(86091024)	108.66051c(86091024)	107.97292c(86091024)
270.0	122.18694 (86051524)	121.08537 (86051524)	119.03031 (86051524)
280.0	128.42958 (86062324)	122.34454 (86062324)	116.26172 (86062324)
290.0	125.55436 (86030924)	123.93582 (86030924)	121.17481 (86030924)
300.0	180.09143 (86030924)	176.10596 (86030924)	170.83446 (86030924)
310.0	139.52470 (86122324)	139.22679 (86122324)	137.09572 (86122324)
320.0	95.88632 (86031324)	94.88271 (86031324)	93.27545 (86031324)
330.0	192.45073 (86031324)	191.49669 (86031324)	189.22551 (86031324)
340.0	164.92162 (86031224)	157.24016 (86031224)	149.53731 (86031224)
350.0	118.83031 (86100924)	114.56316 (86100924)	110.45533 (86100924)
360.0	171.98863 (86082024)	177.59918 (86082024)	181.78137 (86082024)

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	47.50154c	(86051724)	15.24	0.00	38.13997c	(86051724)
30.48	0.00	35.50177c	(86082324)	45.72	0.00	31.50035c	(86082324)
60.96	0.00	31.72360c	(86111324)	76.20	0.00	28.17013c	(86111324)
91.44	0.00	21.38367c	(86111324)	106.68	0.00	22.04741c	(86111324)
121.92	0.00	20.38531	(86032224)	137.16	0.00	32.50046	(86032224)
152.40	0.00	21.76116	(86011124)	167.64	0.00	24.79343	(86011124)
182.88	0.00	35.97385	(86011124)	198.12	0.00	25.94607	(86011124)
213.36	0.00	24.81651	(86011124)	213.36	15.24	20.25550	(86011124)
213.36	30.48	16.32053c	(86012824)	213.36	45.72	15.07500	(86012724)
213.36	60.96	21.64715	(86012724)	213.36	76.20	24.29000	(86012724)
213.36	91.44	19.86709	(86012724)	213.36	106.68	15.09580	(86012724)
213.36	121.92	16.52388	(86012724)	213.36	137.16	15.87096	(86012724)
213.36	152.40	14.67054	(86012724)	213.36	167.64	18.34954	(86022724)
213.36	182.88	19.48064	(86022724)	213.36	198.12	21.07750	(86022724)
213.36	213.36	25.71371c	(86060824)	213.36	220.98	28.67378c	(86060824)
198.12	220.98	29.13867c	(86060824)	182.88	220.98	27.90601c	(86060824)
167.64	220.98	24.95761c	(86060824)	152.40	220.98	27.61042c	(86071324)
137.16	220.98	29.27620c	(86071324)	121.92	220.98	29.92634c	(86071324)
106.68	220.98	30.10814c	(86061424)	91.44	220.98	34.75282	(86080524)
76.20	220.98	44.68061	(86031324)	60.96	220.98	40.14549	(86080524)
45.72	220.98	39.85207	(86080524)	30.48	220.98	47.35563	(86071724)
15.24	220.98	56.35637	(86071724)	0.00	220.98	64.90476	(86071724)
0.00	213.36	61.14838	(86071724)	0.00	198.12	54.51085c	(86051724)
0.00	182.88	49.16234c	(86051724)	0.00	167.64	43.77223c	(86051724)
0.00	152.40	38.51183c	(86051724)	0.00	137.16	33.58053c	(86051724)
0.00	121.92	29.98244c	(86051724)	0.00	106.68	28.42477c	(86051724)
0.00	91.44	29.55272c	(86051724)	0.00	76.20	33.30820c	(86051724)
0.00	60.96	37.71082c	(86051724)	0.00	45.72	41.44720c	(86051724)
0.00	30.48	44.26009c	(86051724)	0.00	15.24	46.30190c	(86051724)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, LONGBUN , EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 ,
EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

** CONC OF MC_24 IN MICROGRAMS/M**3 **

RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE			RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE		
1.	247.84688	(86101624) AT (	414.50,	-735.08)	GP	26.	193.16055c	(86081824) AT (	952.40,	418.46)	GP
2.	247.22655	(86101624) AT (	431.60,	-782.07)	GP	27.	193.05244	(86122824) AT (	106.68,	-839.36)	GP
3.	246.99931	(86101624) AT (	397.40,	-688.10)	GP	28.	192.65807	(86042924) AT (	670.50,	-94.57)	GP
4.	245.45540	(86101624) AT (	448.70,	-829.05)	GP	29.	192.46080c	(86081824) AT (	576.53,	281.65)	GP
5.	244.46034	(86101624) AT (	380.30,	-641.11)	GP	30.	192.45073	(86031324) AT (	-343.32,	890.06)	GP
6.	239.95610	(86101624) AT (	363.20,	-594.13)	GP	31.	192.23102c	(86071324) AT (	106.68,	510.64)	GP
7.	233.20280	(86101624) AT (	346.09,	-547.14)	GP	32.	191.81635	(86031224) AT (	-132.73,	768.42)	GP
8.	223.90022	(86101624) AT (	328.99,	-500.16)	GP	33.	191.77039	(86042924) AT (	717.48,	-111.67)	GP
9.	219.68213c	(86081824) AT (	717.48,	332.95)	GP	34.	191.64348	(86031324) AT (	-318.32,	846.76)	GP
10.	217.85995c	(86081824) AT (	764.46,	350.05)	GP	35.	191.49669	(86031324) AT (	-368.32,	933.36)	GP
11.	217.41370c	(86081824) AT (	670.50,	315.85)	GP	36.	189.70242c	(86071324) AT (	106.68,	560.64)	GP
12.	213.41753c	(86081824) AT (	811.45,	367.16)	GP	37.	189.64305	(86042924) AT (	623.51,	-77.47)	GP
13.	211.70418	(86101624) AT (	311.89,	-453.18)	GP	38.	189.33333	(86031324) AT (	-293.32,	803.46)	GP
14.	209.10349c	(86081824) AT (	623.51,	298.75)	GP	39.	189.22551	(86031324) AT (	-393.32,	976.67)	GP
15.	207.39177c	(86081824) AT (	858.43,	384.26)	GP	40.	189.20056c	(86071324) AT (	106.68,	460.64)	GP
16.	200.48509c	(86081824) AT (	905.42,	401.36)	GP	41.	188.69978	(86122824) AT (	106.68,	-789.36)	GP
17.	198.60835	(86120524) AT (	271.65,	-824.93)	GP	42.	188.36449	(86042924) AT (	764.46,	-128.77)	GP
18.	197.93709	(86120524) AT (	280.33,	-874.17)	GP	43.	188.06226	(86031224) AT (	-64.33,	580.49)	GP
19.	197.35126	(86120524) AT (	262.96,	-775.69)	GP	44.	188.00044	(86040624) AT (	-239.73,	310.64)	GP
20.	196.84816	(86031224) AT (	-98.53,	674.46)	GP	45.	187.62172	(86120524) AT (	245.60,	-677.21)	GP
21.	196.16187	(86101624) AT (	294.79,	-406.19)	GP	46.	187.28772	(86040624) AT (	-196.43,	285.64)	GP
22.	195.57593	(86031224) AT (	-115.63,	721.44)	GP	47.	186.33867	(86031224) AT (	-149.84,	815.41)	GP
23.	195.16173	(86122824) AT (	106.68,	-889.36)	GP	48.	185.71640c	(86081824) AT (	999.39,	435.56)	GP
24.	194.69640	(86031224) AT (	-81.43,	627.47)	GP	49.	185.63440c	(86071324) AT (	167.46,	455.32)	GP
25.	193.84846	(86120524) AT (	254.28,	-726.45)	GP	50.	185.54893	(86031324) AT (	-268.32,	760.16)	GP

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF MC_24 IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	247.84688	ON 86101624: AT (	414.50, -735.08, 0.00, 0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 330 Informational Message(s)

A Total of 330 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX G

ISCST2 OUTPUT LISTING

TOLUENE DIISOCYANATE 8-HOUR AVERAGE EMISSIONS

RUN: FMXTDI8

```
                    ISCST2 - (DATED 93109)

                    IBM-PC VERSION (2.11 ) ISCST2F
                    (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                    SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  4/25/1995 at 15:27:01


*** TRINITY SOURCE FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXSRC.PNT
*** TRINITY DOWNWASH FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXREC.REC
CO STARTING
CO TITLEONE Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks
CO TITLETWO TDI 8-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 8
CO POLLUTID TDI_8
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79      0.00
SO SRCPARAM FOAMLINE 0.034964     38.10     299.82    24.5307     0.857
SO LOCATION REBND_20 POINT     141.43     162.76      0.00
SO SRCPARAM REBND_20 0.000290     16.15     299.82    24.2552     0.610
SO LOCATION REBND_21 POINT     141.43     166.42      0.00
SO SRCPARAM REBND_21 0.000290     16.15     299.82    24.2552     0.610
SO BUILDHGT FOAMLINE    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    12.19
SO BUILDHGT FOAMLINE    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID  FOAMLINE     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE     39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE     37.02    33.83    93.48    88.29    80.42    12.19
SO BUILDWID  FOAMLINE     18.62    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE     39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE     37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT REBND_20    12.19    12.19    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    12.19    10.67    10.67    10.97    10.97
SO BUILDHGT REBND_20    10.97    10.97    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDWID  REBND_20     80.42    88.29   144.67   152.11   154.93   153.04
SO BUILDWID  REBND_20    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_20    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  REBND_20    116.96    88.29   144.67   152.11    24.41    23.11
SO BUILDWID  REBND_20     21.10    18.45   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_20     37.02    33.83    29.61   101.32    87.04    70.11
SO BUILDHGT REBND_21    12.19    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.97    10.97
```

```
SO BUILDHGT REBND_21    10.97    10.97    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDWID  REBND_21     80.42   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  REBND_21    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_21    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  REBND_21    116.96   132.83   144.67   152.11    24.41    23.11
SO BUILDWID  REBND_21     21.10    18.45   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_21     37.02    33.83    29.61    24.49    87.04    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
```

```
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 8 FIRST
OU MAXTABLE 8 50
OU FINISHED

**************************************
*** SETUP Finishes Successfully ***
**************************************
```

```
**MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   8-HR

**This Run Includes:    3 Source(s);      1 Source Group(s); and    706 Receptor(s)

**The Model Assumes A Pollutant Type of:  TDI_8

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
        Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
        Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;   Decay Coef. =  0.0000     ;   Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                               ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: D:\MODELDAT\ISCST2\FMXTEMP\FMXTDI8.DAT  ;  **Output Print File: D:\MODELDAT\ISCST2\FMXTEMP\FMXTDI8.LST
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.34964E-01	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
REBND_20	0	0.29000E-03	141.4	162.8	0.0	16.15	299.82	24.26	0.61	YES	
REBND_21	0	0.29000E-03	141.4	166.4	0.0	16.15	299.82	24.26	0.61	YES	

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, REBND_20, REBND_21,

```
*** ISCST2 - VERSION 93109 ***     *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***     04/25/95
                                   *** TDI 8-hr Average Emissions                                          ***     15:27:02
                                                                                                                   PAGE   4
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT
```

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: REBND_20

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	12.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	12.2,	88.3,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	101.3,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

SOURCE ID: REBND_21

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	24.5,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(0.0,	0.0,	0.0,	0.0);	(15.2,	0.0,	0.0,	0.0);
(30.5,	0.0,	0.0,	0.0);	(45.7,	0.0,	0.0,	0.0);
(61.0,	0.0,	0.0,	0.0);	(76.2,	0.0,	0.0,	0.0);
(91.4,	0.0,	0.0,	0.0);	(106.7,	0.0,	0.0,	0.0);
(121.9,	0.0,	0.0,	0.0);	(137.2,	0.0,	0.0,	0.0);
(152.4,	0.0,	0.0,	0.0);	(167.6,	0.0,	0.0,	0.0);
(182.9,	0.0,	0.0,	0.0);	(198.1,	0.0,	0.0,	0.0);
(213.4,	0.0,	0.0,	0.0);	(213.4,	15.2,	0.0,	0.0);
(213.4,	30.5,	0.0,	0.0);	(213.4,	45.7,	0.0,	0.0);
(213.4,	61.0,	0.0,	0.0);	(213.4,	76.2,	0.0,	0.0);
(213.4,	91.4,	0.0,	0.0);	(213.4,	106.7,	0.0,	0.0);
(213.4,	121.9,	0.0,	0.0);	(213.4,	137.2,	0.0,	0.0);
(213.4,	152.4,	0.0,	0.0);	(213.4,	167.6,	0.0,	0.0);
(213.4,	182.9,	0.0,	0.0);	(213.4,	198.1,	0.0,	0.0);
(213.4,	213.4,	0.0,	0.0);	(213.4,	221.0,	0.0,	0.0);
(198.1,	221.0,	0.0,	0.0);	(182.9,	221.0,	0.0,	0.0);
(167.6,	221.0,	0.0,	0.0);	(152.4,	221.0,	0.0,	0.0);
(137.2,	221.0,	0.0,	0.0);	(121.9,	221.0,	0.0,	0.0);
(106.7,	221.0,	0.0,	0.0);	(91.4,	221.0,	0.0,	0.0);
(76.2,	221.0,	0.0,	0.0);	(61.0,	221.0,	0.0,	0.0);
(45.7,	221.0,	0.0,	0.0);	(30.5,	221.0,	0.0,	0.0);
(15.2,	221.0,	0.0,	0.0);	(0.0,	221.0,	0.0,	0.0);
(0.0,	213.4,	0.0,	0.0);	(0.0,	198.1,	0.0,	0.0);
(0.0,	182.9,	0.0,	0.0);	(0.0,	167.6,	0.0,	0.0);
(0.0,	152.4,	0.0,	0.0);	(0.0,	137.2,	0.0,	0.0);
(0.0,	121.9,	0.0,	0.0);	(0.0,	106.7,	0.0,	0.0);
(0.0,	91.4,	0.0,	0.0);	(0.0,	76.2,	0.0,	0.0);
(0.0,	61.0,	0.0,	0.0);	(0.0,	45.7,	0.0,	0.0);
(0.0,	30.5,	0.0,	0.0);	(0.0,	15.2,	0.0,	0.0);

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	0.03345 (86061416)	0.09573 (86061416)	0.16870 (86071316)	0.21787 (86071316)	0.23381 (86071316)
20.0	0.02029 (86080216)	0.06610 (86071316)	0.11873 (86071316)	0.14580 (86071316)	0.14580 (86071316)
30.0	0.01740 (86072824)	0.05406 (86060816)	0.09773 (86060816)	0.11101 (86060816)	0.11987 (86080416)
40.0	0.01975 (86112016)	0.03436 (86053116)	0.09238 (86053116)	0.13157 (86053116)	0.16999 (86080416)
50.0	0.02212 (86040908)	0.02149c(86060916)	0.06054 (86053116)	0.11324 (86072616)	0.15949 (86072616)
60.0	0.02202 (86022424)	0.03793 (86042124)	0.04969 (86071516)	0.09505 (86072016)	0.13336 (86072016)
70.0	0.01741 (86012016)	0.01678 (86011924)	0.05066 (86091216)	0.10745 (86072016)	0.15960 (86072016)
80.0	0.01806 (86041624)	0.02025 (86011324)	0.05825 (86091216)	0.12020 (86091216)	0.16897 (86091216)
90.0	0.02313 (86042916)	0.02099 (86042916)	0.05469 (86071516)	0.10392 (86071516)	0.13279 (86071516)
100.0	0.02118 (86012324)	0.02194 (86042916)	0.04898 (86050816)	0.09052 (86050816)	0.11631 (86050816)
110.0	0.01859 (86012816)	0.02509 (86090216)	0.06310 (86090216)	0.10321 (86052216)	0.15209 (86042916)
120.0	0.01934 (86012808)	0.03048 (86042616)	0.08396 (86090216)	0.15177 (86090216)	0.19594 (86090216)
130.0	0.01563 (86101616)	0.02710c(86082216)	0.07810 (86042616)	0.15379 (86042616)	0.20634 (86042616)
140.0	0.02629 (86101616)	0.03382 (86101616)	0.06607 (86050316)	0.10090 (86050316)	0.13985 (86042816)
150.0	0.02636 (86120408)	0.04131 (86052316)	0.08461 (86052316)	0.13004 (86101616)	0.19428 (86101616)
160.0	0.02818c(86082316)	0.07871c(86082316)	0.11406c(86082316)	0.14726 (86110316)	0.16008 (86110316)
170.0	0.03789c(86082316)	0.10691c(86082316)	0.16718c(86082316)	0.19122c(86082316)	0.21420 (86110316)
180.0	0.04658c(86082316)	0.10967c(86082316)	0.17305c(86082316)	0.20776c(86082316)	0.21127c(86082316)
190.0	0.06722c(86082316)	0.12000c(86082316)	0.16311c(86082316)	0.18531c(86082316)	0.18660c(86082316)
200.0	0.09408c(86082316)	0.15756c(86082316)	0.19410c(86082316)	0.20179c(86082316)	0.18999c(86082316)
210.0	0.10506c(86082316)	0.18269c(86082316)	0.23131c(86082316)	0.24406c(86082316)	0.23221c(86082316)
220.0	0.09116c(86082316)	0.16158c(86082316)	0.21271c(86082316)	0.23396c(86082316)	0.23198c(86082316)
230.0	0.08750 (86051716)	0.13938 (86051116)	0.17601 (86051116)	0.18879 (86051116)	0.18652 (86051116)
240.0	0.08911 (86051716)	0.13011 (86062616)	0.16619 (86062616)	0.18159 (86062616)	0.18268 (86062616)
250.0	0.07747 (86062616)	0.13173 (86062616)	0.17152 (86062616)	0.19133 (86062616)	0.20491 (86091516)
260.0	0.06542 (86062616)	0.11237 (86062616)	0.15170 (86062616)	0.17581 (86062616)	0.18678 (86062616)
270.0	0.06269 (86060116)	0.09537 (86051316)	0.12937 (86051316)	0.14798 (86051316)	0.15469 (86051316)
280.0	0.07811 (86060116)	0.12851 (86043016)	0.16535 (86043016)	0.18203 (86043016)	0.18408 (86043016)
290.0	0.09568 (86043016)	0.14515 (86043016)	0.16502 (86043016)	0.16179 (86043016)	0.17255 (86062316)
300.0	0.10204 (86043016)	0.13866 (86040616)	0.19952 (86040616)	0.23314 (86040616)	0.24437 (86040616)
310.0	0.08835 (86043016)	0.17235 (86040616)	0.23641 (86040616)	0.26231 (86040616)	0.26183 (86040616)
320.0	0.07921 (86062416)	0.13972 (86040616)	0.18775 (86052916)	0.20769 (86052916)	0.20212 (86052916)
330.0	0.07748 (86052916)	0.13819 (86052916)	0.16639 (86052916)	0.16506 (86052916)	0.16793 (86082516)
340.0	0.06471 (86071716)	0.09702 (86052916)	0.12845 (86082516)	0.16326 (86082516)	0.17836 (86082516)
350.0	0.04679 (86080516)	0.11243 (86080516)	0.15687 (86080516)	0.17380 (86082716)	0.18563 (86100916)
360.0	0.05406 (86080516)	0.11556 (86080516)	0.15934 (86071316)	0.21133 (86071316)	0.23399 (86071316)

MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	0.22693 (86071316)	0.20958 (86071316)	0.18760 (86071316)	0.16466 (86071316)	0.15378 (86080316)
20.0	0.14885 (86010216)	0.16107 (86010216)	0.16598 (86010216)	0.16512 (86010216)	0.16054 (86010216)
30.0	0.14137 (86080416)	0.15214 (86080416)	0.15522 (86080416)	0.15161 (86080416)	0.14422 (86080416)
40.0	0.19305 (86080416)	0.19695 (86080416)	0.19089 (86080416)	0.17776 (86080416)	0.16192 (86080416)
50.0	0.18231 (86072616)	0.18703 (86072616)	0.18209 (86072616)	0.17127 (86100416)	0.17323 (86100416)
60.0	0.18905 (86100416)	0.22752 (86100416)	0.25009 (86100416)	0.25751 (86100416)	0.25375 (86100416)
70.0	0.18937 (86072016)	0.20066 (86072016)	0.22322 (86081816)	0.23647 (86081816)	0.23925 (86081816)
80.0	0.19411 (86091216)	0.19809 (86091216)	0.19017 (86091216)	0.17571 (86091216)	0.15896 (86022616)
90.0	0.15397 (86071916)	0.16795 (86071916)	0.17070 (86071916)	0.16586 (86071916)	0.15654 (86071916)
100.0	0.13269c(86071416)	0.13790 (86071916)	0.14494 (86071916)	0.14469 (86071916)	0.13970 (86071916)
110.0	0.21193 (86042916)	0.25284 (86042916)	0.27514 (86042916)	0.28200 (86042916)	0.27833 (86042916)
120.0	0.21119 (86090216)	0.20705 (86090216)	0.20086 (86042816)	0.19715 (86052216)	0.18952 (86052216)
130.0	0.22887 (86042616)	0.23089 (86042616)	0.22193 (86042616)	0.20627 (86042616)	0.19783 (86012816)
140.0	0.16192 (86042816)	0.16909 (86042816)	0.16654 (86042816)	0.15743 (86042816)	0.14538 (86042816)
150.0	0.24541 (86101616)	0.27803 (86101616)	0.29286 (86101616)	0.29390 (86101616)	0.28584 (86101616)
160.0	0.15528 (86110316)	0.15373 (86101616)	0.16792 (86101616)	0.17621 (86101616)	0.17997 (86101616)
170.0	0.23287 (86110316)	0.23711 (86110316)	0.22989 (86110316)	0.21644 (86110316)	0.20017 (86110316)
180.0	0.19598c(86082316)	0.19840 (86110316)	0.20712 (86110316)	0.20843 (86110316)	0.20478 (86110316)
190.0	0.17507c(86082316)	0.15723c(86082316)	0.14593 (86102116)	0.14098 (86102116)	0.13396 (86102116)
200.0	0.19864 (86120416)	0.21387 (86120416)	0.21879 (86120416)	0.21652 (86120416)	0.20968 (86120416)
210.0	0.20949c(86082316)	0.18431 (86111316)	0.17813 (86111316)	0.16929 (86111316)	0.15919 (86111316)
220.0	0.21772c(86082316)	0.19706c(86082316)	0.18640 (86060516)	0.18799 (86060516)	0.18587 (86060516)
230.0	0.17652 (86051116)	0.16218 (86051116)	0.14781 (86091616)	0.13574 (86091616)	0.13446 (86102216)
240.0	0.17581 (86062616)	0.16541 (86091616)	0.16096 (86091616)	0.15451 (86091616)	0.15651 (86033116)
250.0	0.21956 (86091516)	0.22379 (86091516)	0.22098 (86091516)	0.21379 (86091516)	0.20413 (86091516)
260.0	0.18806 (86062616)	0.18228 (86062616)	0.17271 (86062616)	0.16146 (86062616)	0.14977 (86062616)
270.0	0.15349 (86051316)	0.15186c(86082616)	0.14751c(86082616)	0.14117c(86082616)	0.13385c(86082616)
280.0	0.18785 (86062316)	0.18980 (86062316)	0.18726 (86062316)	0.18205 (86062316)	0.17534 (86062316)
290.0	0.18712 (86062316)	0.19459 (86062316)	0.19704 (86062316)	0.19601 (86062316)	0.19261 (86062316)
300.0	0.24225 (86040616)	0.23047 (86040616)	0.21427 (86040616)	0.19670 (86040616)	0.17940 (86040616)
310.0	0.24877 (86040616)	0.22796 (86040616)	0.20495 (86040616)	0.18258 (86040616)	0.16392 (86100316)
320.0	0.20771 (86112516)	0.21246 (86112516)	0.20845 (86112516)	0.19932 (86112516)	0.18755 (86112516)
330.0	0.18560 (86082516)	0.19411 (86082516)	0.19499 (86082516)	0.19068 (86082516)	0.18310 (86082516)
340.0	0.18271 (86082716)	0.17821 (86082716)	0.18036 (86031216)	0.19508 (86031216)	0.20355 (86031216)
350.0	0.21020 (86100916)	0.22111 (86100916)	0.22073 (86100916)	0.21332 (86100916)	0.20208 (86100916)
360.0	0.23479 (86071316)	0.22412 (86071316)	0.20664 (86071316)	0.20788 (86112616)	0.21531 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	0.14622 (86080316)	0.13781 (86080316)	0.12914 (86080316)	0.12058 (86080316)	0.11235 (86080316)
20.0	0.15373 (86010216)	0.14713 (86072316)	0.14760 (86072316)	0.14610 (86072316)	0.14319 (86072316)
30.0	0.13497 (86080416)	0.13052 (86062916)	0.12729 (86062916)	0.12281 (86062916)	0.11763 (86062916)
40.0	0.14580 (86080416)	0.13055 (86080416)	0.11670 (86080416)	0.11114 (86030416)	0.11042 (86030416)
50.0	0.17025 (86100416)	0.16421 (86100416)	0.15647 (86100416)	0.14793 (86100416)	0.13915 (86100416)
60.0	0.24336 (86100416)	0.22951 (86100416)	0.21424 (86100416)	0.19876 (86100416)	0.18378 (86100416)
70.0	0.23503 (86081816)	0.22653 (86081816)	0.21566 (86081816)	0.20368 (86081816)	0.19142 (86081816)
80.0	0.15012 (86022616)	0.14004 (86022616)	0.12974 (86022616)	0.11975 (86022616)	0.11037 (86022616)
90.0	0.14532 (86071916)	0.13367 (86071916)	0.12236 (86071916)	0.11179 (86071916)	0.10211 (86071916)
100.0	0.13221 (86071916)	0.12364 (86071916)	0.11481 (86071916)	0.10621 (86071916)	0.09807 (86071916)
110.0	0.26829 (86042916)	0.25481 (86042916)	0.23977 (86042916)	0.22435 (86042916)	0.20923 (86042916)
120.0	0.18055 (86012816)	0.17493 (86012816)	0.16828 (86012816)	0.16120 (86012816)	0.15401 (86012816)
130.0	0.19967 (86012816)	0.19688 (86012816)	0.19111 (86012816)	0.18353 (86012816)	0.17498 (86012816)
140.0	0.13568 (86030516)	0.12723 (86030516)	0.11824 (86030516)	0.10930 (86030516)	0.10075 (86030516)
150.0	0.27235 (86101616)	0.25602 (86101616)	0.23856 (86101616)	0.22107 (86101616)	0.20414 (86101616)
160.0	0.18040 (86101616)	0.17845 (86101616)	0.17489 (86101616)	0.17022 (86101616)	0.16488 (86101616)
170.0	0.18318 (86110316)	0.16663 (86110316)	0.15392 (86012408)	0.16471 (86012408)	0.17209 (86012408)
180.0	0.19803 (86110316)	0.18947 (86110316)	0.17999 (86110316)	0.17019 (86110316)	0.16043 (86110316)
190.0	0.12604 (86102116)	0.11794 (86102116)	0.11005 (86102116)	0.10258 (86102116)	0.09970 (86111324)
200.0	0.20017 (86120416)	0.18931 (86120416)	0.17797 (86120416)	0.16669 (86120416)	0.15578 (86120416)
210.0	0.14871 (86111316)	0.13839 (86111316)	0.12887 (86120416)	0.12334 (86120416)	0.12165 (86032716)
220.0	0.18122 (86060516)	0.17494 (86060516)	0.16772 (86060516)	0.15996 (86060516)	0.15203 (86060516)
230.0	0.13654 (86102216)	0.13739 (86102216)	0.13718 (86102216)	0.13608 (86102216)	0.14079 (86050924)
240.0	0.16218 (86111416)	0.17376 (86111416)	0.18225 (86111416)	0.18803 (86111416)	0.19149 (86111416)
250.0	0.19325 (86091516)	0.18197 (86091516)	0.17080 (86091516)	0.16002 (86091516)	0.14980 (86091516)
260.0	0.13983 (86121416)	0.13337 (86121416)	0.12677 (86121416)	0.12021 (86121416)	0.11827 (86091016)
270.0	0.13246c(86020824)	0.13598c(86020824)	0.13738c(86020824)	0.13748 (86031008)	0.14313 (86031008)
280.0	0.16789 (86062316)	0.16015 (86062316)	0.15670 (86040416)	0.15631 (86040416)	0.15454 (86040416)
290.0	0.18761 (86062316)	0.18159 (86062316)	0.17494 (86062316)	0.16803 (86062316)	0.16093 (86062316)
300.0	0.16316 (86040616)	0.15007 (86030924)	0.15577 (86030924)	0.15920 (86030924)	0.16032 (86030924)
310.0	0.15515 (86100316)	0.14572 (86100316)	0.13621 (86100316)	0.12694 (86100316)	0.12609 (86122316)
320.0	0.17475 (86112516)	0.16187 (86112516)	0.14946 (86112516)	0.13781 (86112516)	0.12703 (86112516)
330.0	0.17367 (86082516)	0.16339 (86082516)	0.15290 (86082516)	0.14260 (86082516)	0.13273 (86082516)
340.0	0.20712 (86031216)	0.20700 (86031216)	0.20420 (86031216)	0.19951 (86031216)	0.19355 (86031216)
350.0	0.18916 (86100916)	0.17588 (86100916)	0.16299 (86100916)	0.15088 (86100916)	0.13971 (86100916)
360.0	0.21800 (86112616)	0.21716 (86112616)	0.21375 (86112616)	0.20851 (86112616)	0.20204 (86112616)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	0.11072 (86073008)	0.11050 (86113016)	0.11249 (86113016)
20.0	0.13932 (86072316)	0.13484 (86072316)	0.12999 (86072316)
30.0	0.11310 (86021116)	0.11289 (86021116)	0.11187 (86021116)
40.0	0.10855 (86030416)	0.10582 (86030416)	0.10253 (86030416)
50.0	0.13185 (86112016)	0.12966 (86112016)	0.12664 (86112016)
60.0	0.16966 (86100416)	0.15840 (86031116)	0.15479 (86031116)
70.0	0.17937 (86081816)	0.16780 (86081816)	0.15689 (86081816)
80.0	0.10170 (86022616)	0.09378 (86022616)	0.09509 (86020716)
90.0	0.09333 (86071916)	0.09076 (86070316)	0.08984 (86070316)
100.0	0.09052 (86071916)	0.09086 (86090616)	0.09220 (86090616)
110.0	0.19482 (86042916)	0.18129 (86042916)	0.16873 (86042916)
120.0	0.14692 (86012816)	0.14171 (86022016)	0.13790 (86022016)
130.0	0.16602 (86012816)	0.15703 (86012816)	0.14824 (86012816)
140.0	0.09363 (86032116)	0.09040 (86032116)	0.08696 (86032116)
150.0	0.18816 (86101616)	0.17330 (86101616)	0.15962 (86101616)
160.0	0.16997 (86111508)	0.18035 (86111508)	0.18854 (86111508)
170.0	0.17648 (86012408)	0.17835 (86012408)	0.17817 (86012408)
180.0	0.15096 (86110316)	0.14191 (86110316)	0.13335 (86110316)
190.0	0.09802 (86111324)	0.09563 (86111324)	0.09422 (86122616)
200.0	0.14544 (86120416)	0.13575 (86120416)	0.13793 (86020908)
210.0	0.12031 (86032716)	0.11847 (86032716)	0.11535 (86032716)
220.0	0.14415 (86060516)	0.13644 (86060516)	0.12869 (86060516)
230.0	0.14417 (86050924)	0.14596 (86050924)	0.14557 (86050924)
240.0	0.19304 (86111416)	0.19264 (86111416)	0.19006 (86111416)
250.0	0.14022 (86091516)	0.13130 (86091516)	0.12304 (86091516)
260.0	0.11872 (86091016)	0.11815 (86091016)	0.11730 (86122308)
270.0	0.14735 (86031008)	0.14963 (86031008)	0.14995 (86031008)
280.0	0.15190 (86040416)	0.14827 (86040416)	0.14365 (86040416)
290.0	0.15386 (86062316)	0.14679 (86062316)	0.13957 (86062316)
300.0	0.15983 (86030924)	0.15790 (86030924)	0.15392 (86030924)
310.0	0.12618 (86122316)	0.12525 (86122316)	0.12246 (86122316)
320.0	0.11716 (86112516)	0.10816 (86112516)	0.09999 (86112516)
330.0	0.12344 (86082516)	0.11478 (86082516)	0.10676 (86082516)
340.0	0.18677 (86031216)	0.17954 (86031216)	0.17201 (86031216)
350.0	0.12952 (86100916)	0.12851 (86052008)	0.12802 (86052008)
360.0	0.19478 (86112616)	0.18708 (86112616)	0.17922 (86112616)

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	0.08515c	(86082316)	15.24	0.00	0.08287c	(86082316)
30.48	0.00	0.07711c	(86082316)	45.72	0.00	0.06755c	(86082316)
60.96	0.00	0.05513c	(86082316)	76.20	0.00	0.04170c	(86082316)
91.44	0.00	0.02972c	(86082316)	106.68	0.00	0.02582	(86101924)
121.92	0.00	0.02260	(86032216)	137.16	0.00	0.02482	(86120524)
152.40	0.00	0.02478	(86122108)	167.64	0.00	0.02698	(86120408)
182.88	0.00	0.02241	(86102008)	198.12	0.00	0.02495	(86101616)
213.36	0.00	0.02514	(86101616)	213.36	15.24	0.02056	(86101616)
213.36	30.48	0.01453	(86011208)	213.36	45.72	0.01822	(86012808)
213.36	60.96	0.02816	(86012808)	213.36	76.20	0.02356	(86012808)
213.36	91.44	0.01433	(86041708)	213.36	106.68	0.01420	(86012324)
213.36	121.92	0.01884	(86011316)	213.36	137.16	0.01449	(86030724)
213.36	152.40	0.01525	(86011324)	213.36	167.64	0.01332	(86011924)
213.36	182.88	0.01881	(86042124)	213.36	198.12	0.02020	(86011916)
213.36	213.36	0.01677	(86011908)	213.36	220.98	0.01966	(86011908)
198.12	220.98	0.01830	(86112016)	182.88	220.98	0.01624	(86030416)
167.64	220.98	0.01127	(86072824)	152.40	220.98	0.00618	(86072916)
137.16	220.98	0.00553	(86121116)	121.92	220.98	0.00842	(86080516)
106.68	220.98	0.01109	(86031316)	91.44	220.98	0.01707	(86071716)
76.20	220.98	0.02753	(86071716)	60.96	220.98	0.03816	(86071716)
45.72	220.98	0.04937	(86062416)	30.48	220.98	0.06154	(86062416)
15.24	220.98	0.07194	(86062416)	0.00	220.98	0.08654	(86040616)
0.00	213.36	0.07816	(86040616)	0.00	198.12	0.07981	(86043016)
0.00	182.88	0.07712	(86043016)	0.00	167.64	0.06646	(86043016)
0.00	152.40	0.05118	(86043016)	0.00	137.16	0.04251	(86060116)
0.00	121.92	0.03686	(86060116)	0.00	106.68	0.03319c	(86050716)
0.00	91.44	0.04350	(86091616)	0.00	76.20	0.05080	(86091616)
0.00	60.96	0.05773	(86051716)	0.00	45.72	0.06822	(86051716)
0.00	30.48	0.07608	(86051716)	0.00	15.24	0.08056	(86051716)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR)		OF TYPE	RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR)		OF TYPE
1.	0.29390	(86101616) AT (	381.68,	-365.67)	GP	26.	0.23856	(86101616) AT (	481.68,	-538.88)	GP
2.	0.29286	(86101616) AT (	356.68,	-322.37)	GP	27.	0.23711	(86110316) AT (	184.82,	-332.52)	GP
3.	0.28584	(86101616) AT (	406.68,	-408.98)	GP	28.	0.23647	(86081816) AT (	623.51,	298.75)	GP
4.	0.28200	(86042916) AT (	623.51,	-77.47)	GP	29.	0.23641	(86040616) AT (	-84.83,	271.34)	GP
5.	0.27833	(86042916) AT (	670.50,	-94.57)	GP	30.	0.23503	(86081816) AT (	717.48,	332.95)	GP
6.	0.27803	(86101616) AT (	331.68,	-279.07)	GP	31.	0.23479	(86071316) AT (	106.68,	510.64)	GP
7.	0.27514	(86042916) AT (	576.53,	-60.37)	GP	32.	0.23399	(86071316) AT (	106.68,	460.64)	GP
8.	0.27235	(86101616) AT (	431.68,	-452.28)	GP	33.	0.23396c	(86082316) AT (	-86.16,	-119.17)	GP
9.	0.26829	(86042916) AT (	717.48,	-111.67)	GP	34.	0.23381	(86071316) AT (	167.46,	455.32)	GP
10.	0.26231	(86040616) AT (	-123.13,	303.48)	GP	35.	0.23314	(86040616) AT (	-153.13,	260.64)	GP
11.	0.26183	(86040616) AT (	-161.44,	335.62)	GP	36.	0.23287	(86110316) AT (	176.14,	-283.28)	GP
12.	0.25751	(86100416) AT (	582.99,	385.64)	GP	37.	0.23221c	(86082316) AT (	-68.32,	-192.47)	GP
13.	0.25602	(86101616) AT (	456.68,	-495.58)	GP	38.	0.23198c	(86082316) AT (	-118.30,	-157.48)	GP
14.	0.25481	(86042916) AT (	764.46,	-128.77)	GP	39.	0.23131c	(86082316) AT (	-18.32,	-105.87)	GP
15.	0.25375	(86100416) AT (	626.30,	410.64)	GP	40.	0.23089	(86042616) AT (	451.40,	-178.61)	GP
16.	0.25284	(86042916) AT (	529.54,	-43.27)	GP	41.	0.23047	(86040616) AT (	-283.03,	335.64)	GP
[illegible]	0.25009	(86100416) AT (	539.69,	360.64)	GP	42.	0.22989	(86110316) AT (	193.50,	-381.76)	GP
18.	0.24877	(86040616) AT (	-199.74,	367.76)	GP	43.	0.22951	(86100416) AT (	712.90,	460.64)	GP
19.	0.24541	(86101616) AT (	306.68,	-235.77)	GP	44.	0.22887	(86042616) AT (	413.10,	-146.48)	GP
20.	0.24437	(86040616) AT (	-196.43,	285.64)	GP	45.	0.22796	(86040616) AT (	-238.04,	399.89)	GP
21.	0.24406c	(86082316) AT (	-43.32,	-149.17)	GP	46.	0.22752	(86100416) AT (	496.39,	335.64)	GP
22.	0.24336	(86100416) AT (	669.60,	435.64)	GP	47.	0.22693	(86071316) AT (	176.14,	504.56)	GP
23.	0.24225	(86040616) AT (	-239.73,	310.64)	GP	48.	0.22653	(86081816) AT (	764.46,	350.05)	GP
24.	0.23977	(86042916) AT (	811.45,	-145.88)	GP	49.	0.22435	(86042916) AT (	858.43,	-162.98)	GP
25.	0.23925	(86081816) AT (	670.50,	315.85)	GP	50.	0.22412	(86071316) AT (	106.68,	560.64)	GP

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF TDI_8 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	0.29390	ON 86101616: AT (	381.68,	-365.67,	0.00,	0.00)	GP	POLAR_1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX H

ISCST2 OUTPUT LISTING

TOLUENE DIISOCYANATE 24-HOUR AVERAGE EMISSIONS

RUN: FMXTDI24

```
                  ISCST2 - (DATED 93109)

                  IBM-PC VERSION (2.11 ) ISCST2F
                  (C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
                  SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  4/25/1995 at 15:15:22


*** TRINITY SOURCE FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXSRC.PNT
*** TRINITY DOWNWASH FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXREC.REC
CO STARTING
CO TITLEONE Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks
CO TITLETWO TDI 24-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 24
CO POLLUTID TDI_24
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION FOAMLINE POINT     175.87     119.79       0.00
SO SRCPARAM FOAMLINE 0.011655      38.10     299.82    24.5307      0.857
SO LOCATION REBND_20 POINT     141.43     162.76       0.00
SO SRCPARAM REBND_20 0.000290      16.15     299.82    24.2552      0.610
SO LOCATION REBND_21 POINT     141.43     166.42       0.00
SO SRCPARAM REBND_21 0.000290      16.15     299.82    24.2552      0.610
SO BUILDHGT FOAMLINE    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    12.19
SO BUILDHGT FOAMLINE    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT FOAMLINE    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT FOAMLINE    12.19    12.19    15.24    15.24    15.24    15.24
SO BUILDWID  FOAMLINE     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE     39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE     37.02    33.83    93.48    88.29    80.42    12.19
SO BUILDWID  FOAMLINE     18.62    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  FOAMLINE     39.97    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  FOAMLINE     37.02    33.83    93.48    88.29    80.42    70.11
SO BUILDHGT REBND_20    12.19    12.19    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    10.67    12.19    10.67    10.67    10.97    10.97
SO BUILDHGT REBND_20    10.97    10.97    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_20    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDWID  REBND_20     80.42    88.29   144.67   152.11   154.93   153.04
SO BUILDWID  REBND_20    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_20    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  REBND_20    116.96    88.29   144.67   152.11    24.41    23.11
SO BUILDWID  REBND_20     21.10    18.45   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_20     37.02    33.83    29.61   101.32    87.04    70.11
SO BUILDHGT REBND_21    12.19    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    10.67    10.67    10.67    10.67    10.97    10.97
```

```
SO BUILDHGT REBND_21    10.97    10.97    10.67    10.67    10.67    10.67
SO BUILDHGT REBND_21    12.19    12.19    12.19    12.19    12.19    12.19
SO BUILDWID  REBND_21     80.42   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  REBND_21    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_21    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  REBND_21    116.96   132.83   144.67   152.11    24.41    23.11
SO BUILDWID  REBND_21     21.10    18.45   120.40   129.50   140.77   147.76
SO BUILDWID  REBND_21     37.02    33.83    29.61    24.49    87.04    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
```

```
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 24 FIRST
OU MAXTABLE 24 50
OU FINISHED

**************************************
*** SETUP Finishes Successfully ***
**************************************
```

```
*** ISCST2 - VERSION 93109 ***     *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks  ***        04/25/95
                                   *** TDI 24-hr Average Emissions                                          ***        15:15:23
                                                                                                                       PAGE   1
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT         DFAULT

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:  24-HR

**This Run Includes:    3 Source(s);      1 Source Group(s); and    706 Receptor(s)

**The Model Assumes A Pollutant Type of:  TDI_24

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =     10.00 ;   Decay Coef. =   0.0000      ;   Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: D:\MODELDAT\ISCST2\FMXTEMP\FMXTDI24.DAT ;  **Output Print File: D:\MODELDAT\ISCST2\FMXTEMP\FMXTDI24.LST
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
FOAMLINE	0	0.11655E-01	175.9	119.8	0.0	38.10	299.82	24.53	0.86	YES	
REBND_20	0	0.29000E-03	141.4	162.8	0.0	16.15	299.82	24.26	0.61	YES	
REBND_21	0	0.29000E-03	141.4	166.4	0.0	16.15	299.82	24.26	0.61	YES	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	FOAMLINE, REBND_20, REBND_21,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: FOAMLINE

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	12.2,	33.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	12.2,	12.2,	0
19	12.2,	18.6,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: REBND_20

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	12.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	12.2,	88.3,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	101.3,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

SOURCE ID: REBND_21

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	24.5,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***

X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***

(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***

(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(	0.0,	0.0,	0.0,	0.0);	(	15.2,	0.0,	0.0,	0.0);
(	30.5,	0.0,	0.0,	0.0);	(	45.7,	0.0,	0.0,	0.0);
(	61.0,	0.0,	0.0,	0.0);	(	76.2,	0.0,	0.0,	0.0);
(	91.4,	0.0,	0.0,	0.0);	(	106.7,	0.0,	0.0,	0.0);
(	121.9,	0.0,	0.0,	0.0);	(	137.2,	0.0,	0.0,	0.0);
(	152.4,	0.0,	0.0,	0.0);	(	167.6,	0.0,	0.0,	0.0);
(	182.9,	0.0,	0.0,	0.0);	(	198.1,	0.0,	0.0,	0.0);
(	213.4,	0.0,	0.0,	0.0);	(	213.4,	15.2,	0.0,	0.0);
(	213.4,	30.5,	0.0,	0.0);	(	213.4,	45.7,	0.0,	0.0);
(	213.4,	61.0,	0.0,	0.0);	(	213.4,	76.2,	0.0,	0.0);
(	213.4,	91.4,	0.0,	0.0);	(	213.4,	106.7,	0.0,	0.0);
(	213.4,	121.9,	0.0,	0.0);	(	213.4,	137.2,	0.0,	0.0);
(	213.4,	152.4,	0.0,	0.0);	(	213.4,	167.6,	0.0,	0.0);
(	213.4,	182.9,	0.0,	0.0);	(	213.4,	198.1,	0.0,	0.0);
(	213.4,	213.4,	0.0,	0.0);	(	213.4,	221.0,	0.0,	0.0);
(	198.1,	221.0,	0.0,	0.0);	(	182.9,	221.0,	0.0,	0.0);
(	167.6,	221.0,	0.0,	0.0);	(	152.4,	221.0,	0.0,	0.0);
(	137.2,	221.0,	0.0,	0.0);	(	121.9,	221.0,	0.0,	0.0);
(	106.7,	221.0,	0.0,	0.0);	(	91.4,	221.0,	0.0,	0.0);
(	76.2,	221.0,	0.0,	0.0);	(	61.0,	221.0,	0.0,	0.0);
(	45.7,	221.0,	0.0,	0.0);	(	30.5,	221.0,	0.0,	0.0);
(	15.2,	221.0,	0.0,	0.0);	(	0.0,	221.0,	0.0,	0.0);
(	0.0,	213.4,	0.0,	0.0);	(	0.0,	198.1,	0.0,	0.0);
(	0.0,	182.9,	0.0,	0.0);	(	0.0,	167.6,	0.0,	0.0);
(	0.0,	152.4,	0.0,	0.0);	(	0.0,	137.2,	0.0,	0.0);
(	0.0,	121.9,	0.0,	0.0);	(	0.0,	106.7,	0.0,	0.0);
(	0.0,	91.4,	0.0,	0.0);	(	0.0,	76.2,	0.0,	0.0);
(	0.0,	61.0,	0.0,	0.0);	(	0.0,	45.7,	0.0,	0.0);
(	0.0,	30.5,	0.0,	0.0);	(	0.0,	15.2,	0.0,	0.0);

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST2 - VERSION 93109 ***   *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***   04/25/95
*** TDI 24-hr Average Emissions ***   15:15:23
PAGE 9

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	0.00840c(86071324)	0.01850c(86071324)	0.02771c(86071324)	0.03357c(86071324)	0.03559c(86071324)
20.0	0.00580 (86080224)	0.01228 (86080224)	0.01710 (86080224)	0.01959 (86080224)	0.02030 (86080224)
30.0	0.00929 (86072824)	0.01474c(86060824)	0.01897c(86060824)	0.01971c(86060824)	0.01825c(86060824)
40.0	0.00977 (86030324)	0.01140 (86030324)	0.01471c(86053124)	0.01976c(86053124)	0.02405 (86080424)
50.0	0.01141 (86022724)	0.01220 (86030424)	0.01292c(86072024)	0.01716c(86072024)	0.02071 (86072624)
60.0	0.01022 (86022424)	0.01301 (86042124)	0.01252c(86072024)	0.01701c(86072024)	0.02183c(86072024)
70.0	0.01492 (86012024)	0.01117c(86041624)	0.00988c(86072024)	0.01671c(86072024)	0.02301c(86072024)
80.0	0.00975 (86042224)	0.01161 (86012024)	0.01053 (86012024)	0.01509 (86091224)	0.02048 (86091224)
90.0	0.01421 (86011324)	0.01046 (86042924)	0.00897c(86071524)	0.01598c(86071524)	0.02021c(86071524)
100.0	0.00979 (86011324)	0.01276 (86011324)	0.01155 (86042924)	0.01430 (86042924)	0.01632 (86042924)
110.0	0.01017c(86012824)	0.00957c(86012824)	0.01105c(86052224)	0.01657c(86052224)	0.02281 (86042924)
120.0	0.01036c(86012824)	0.00871 (86122924)	0.01312 (86042624)	0.02055c(86090224)	0.02562c(86090224)
130.0	0.00908 (86032124)	0.00827 (86032124)	0.01209 (86042624)	0.02122 (86042624)	0.02794 (86042624)
140.0	0.01676 (86011124)	0.01116 (86101624)	0.01139 (86050324)	0.01612 (86050324)	0.01859 (86050324)
150.0	0.01401 (86101724)	0.01503 (86101624)	0.01912 (86101624)	0.02453 (86101624)	0.03028 (86101624)
160.0	0.01661 (86120524)	0.01219 (86120524)	0.01575 (86110324)	0.02059 (86110324)	0.02294 (86110324)
170.0	0.01167 (86120524)	0.01329 (86120524)	0.01902c(86082324)	0.02331 (86110324)	0.02797 (86110324)
180.0	0.01010 (86120624)	0.01367c(86082324)	0.02001c(86082324)	0.02334c(86082324)	0.02343c(86082324)
190.0	0.01322c(86111324)	0.01475c(86082324)	0.01899c(86082324)	0.02102c(86082324)	0.02088c(86082324)
200.0	0.01221c(86111324)	0.01860c(86082324)	0.02214c(86082324)	0.02399c(86111324)	0.02490c(86111324)
210.0	0.01352c(86082324)	0.02146c(86082324)	0.02625c(86082324)	0.02727c(86082324)	0.02670c(86111324)
220.0	0.01283 (86010824)	0.01970c(86082324)	0.02472c(86082324)	0.02662c(86082324)	0.02614c(86082324)
230.0	0.01356 (86010824)	0.02017c(86051124)	0.02463c(86051124)	0.02660c(86051124)	0.02697c(86051124)
240.0	0.01355c(86051724)	0.01926 (86062624)	0.02347 (86062624)	0.02551 (86062624)	0.02595 (86062624)
250.0	0.01431 (86062624)	0.01944 (86062624)	0.02306 (86062624)	0.02645 (86091524)	0.03000 (86091524)
260.0	0.01231 (86062624)	0.01673 (86062624)	0.02070 (86062624)	0.02326 (86062624)	0.02451 (86062624)
270.0	0.01064c(86051324)	0.01793c(86051324)	0.02378c(86051324)	0.02717c(86051324)	0.02858c(86051324)
280.0	0.01196c(86060124)	0.01778c(86051324)	0.02159c(86051324)	0.02541 (86062324)	0.02852 (86062324)
290.0	0.01521 (86043024)	0.02248 (86043024)	0.02387 (86043024)	0.02426 (86062324)	0.02694 (86062324)
300.0	0.01834 (86043024)	0.02118c(86093024)	0.02855 (86040624)	0.03263 (86040624)	0.03411 (86040624)
310.0	0.01560c(86093024)	0.02572 (86040624)	0.03331 (86040624)	0.03631 (86040624)	0.03599 (86040624)
320.0	0.01726 (86030924)	0.02164c(86052924)	0.02762c(86052924)	0.02949c(86052924)	0.02812c(86052924)
330.0	0.01516 (86071724)	0.02166c(86052924)	0.02506c(86052924)	0.02448c(86052924)	0.02632c(86053024)
340.0	0.01224 (86071724)	0.01503c(86052924)	0.01997c(86082524)	0.02353c(86082524)	0.02458c(86082524)
350.0	0.01205 (86031324)	0.01594 (86080524)	0.02173c(86082724)	0.02512c(86082724)	0.02771 (86031224)
360.0	0.00993 (86080524)	0.01625 (86080524)	0.02458c(86071324)	0.03058c(86071324)	0.03353c(86071324)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	0.03526c(86071324)	0.03385c(86071324)	0.03192c(86071324)	0.02985c(86071324)	0.02789c(86071324)
20.0	0.02036 (86080224)	0.02089c(86010224)	0.02110c(86010224)	0.02146 (86072324)	0.02310 (86072324)
30.0	0.01917 (86080424)	0.02047 (86080424)	0.02099 (86080424)	0.02078 (86080424)	0.02161c(86081924)
40.0	0.02759 (86080424)	0.02894 (86080424)	0.02894 (86080424)	0.02786 (86080424)	0.02621 (86080424)
50.0	0.02393 (86072624)	0.02497 (86072624)	0.02476 (86072624)	0.02371c(86072024)	0.02287c(86072024)
60.0	0.02501c(86072024)	0.02740 (86100424)	0.02993 (86100424)	0.03077 (86100424)	0.03036 (86100424)
70.0	0.02709c(86081824)	0.03396c(86081824)	0.03868c(86081824)	0.04131c(86081824)	0.04229c(86081824)
80.0	0.02311 (86091224)	0.02337 (86091224)	0.02290c(86071924)	0.02269c(86071924)	0.02198c(86071924)
90.0	0.02392c(86071924)	0.02678c(86071924)	0.02829c(86071924)	0.02879c(86071924)	0.02863c(86071924)
100.0	0.01828c(86071924)	0.02096c(86071924)	0.02265c(86071924)	0.02341c(86071924)	0.02346c(86071924)
110.0	0.03046 (86042924)	0.03589 (86042924)	0.03912 (86042924)	0.04054 (86042924)	0.04069 (86042924)
120.0	0.02723c(86052224)	0.03086c(86052224)	0.03268c(86052224)	0.03296c(86052224)	0.03224c(86052224)
130.0	0.03121 (86042624)	0.03193 (86042624)	0.03109 (86042624)	0.02923 (86042624)	0.02957c(86012824)
140.0	0.02105 (86042824)	0.02267 (86042824)	0.02323 (86042824)	0.02294 (86042824)	0.02216 (86042824)
150.0	0.03496 (86101624)	0.03805 (86101624)	0.03947 (86101624)	0.03949 (86101624)	0.03852 (86101624)
160.0	0.02316 (86110324)	0.02553 (86101624)	0.02837 (86101624)	0.03085 (86101624)	0.03296 (86101624)
170.0	0.03050 (86110324)	0.03155 (86110324)	0.03136 (86110324)	0.03044 (86110324)	0.02914 (86110324)
180.0	0.02404 (86110324)	0.02644 (86110324)	0.02789 (86110324)	0.02866 (86110324)	0.02898 (86110324)
190.0	0.01944c(86082324)	0.01963 (86102124)	0.01936 (86102124)	0.01879 (86102124)	0.01810 (86102124)
200.0	0.02486c(86111324)	0.02601 (86120424)	0.02632 (86120424)	0.02587 (86120424)	0.02495 (86120424)
210.0	0.02780c(86111324)	0.02809c(86111324)	0.02783c(86111324)	0.02718c(86111324)	0.02627c(86111324)
220.0	0.02636 (86060524)	0.02851 (86060524)	0.02977 (86060524)	0.03031 (86060524)	0.03031 (86060524)
230.0	0.02642c(86051124)	0.02524c(86051124)	0.02377c(86051124)	0.02292 (86010924)	0.02506 (86010924)
240.0	0.02541 (86062624)	0.02420 (86062624)	0.02271 (86062624)	0.02389 (86010924)	0.02601 (86010924)
250.0	0.03177 (86091524)	0.03220 (86091524)	0.03174 (86091524)	0.03075 (86091524)	0.02949 (86091524)
260.0	0.02477 (86062624)	0.02430 (86062624)	0.02344 (86062624)	0.02240 (86062624)	0.02129 (86062624)
270.0	0.02869c(86051324)	0.02787c(86051324)	0.02663c(86051324)	0.02526c(86051324)	0.02391c(86051324)
280.0	0.02972 (86062324)	0.02969 (86062324)	0.02901 (86062324)	0.02801 (86062324)	0.02684 (86062324)
290.0	0.02840 (86062324)	0.02892 (86062324)	0.02883 (86062324)	0.02837 (86062324)	0.02768 (86062324)
300.0	0.03399 (86040624)	0.03265 (86040624)	0.03071 (86040624)	0.02879 (86030924)	0.03100 (86030924)
310.0	0.03400 (86040624)	0.03105 (86040624)	0.02817c(86100324)	0.02735c(86100324)	0.02611c(86100324)
320.0	0.02668 (86112524)	0.02643 (86112524)	0.02608 (86081124)	0.02545 (86081124)	0.02442 (86081124)
330.0	0.02608c(86053024)	0.02598c(86082524)	0.02579c(86082524)	0.02499c(86082524)	0.02605 (86031324)
340.0	0.02406c(86082524)	0.02746 (86031224)	0.03061 (86031224)	0.03261 (86031224)	0.03364 (86031224)
350.0	0.02941 (86031224)	0.02980 (86100924)	0.02999 (86100924)	0.02947 (86100924)	0.02858 (86100924)
360.0	0.03432c(86071324)	0.03401c(86071324)	0.03295c(86071324)	0.03153c(86071324)	0.03006c(86071324)

*** ISCST2 - VERSION 93109 ***   *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***   04/25/95
*** TDI 24-hr Average Emissions ***   15:15:23
PAGE 11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	0.02615c(86071324)	0.02739 (86082024)	0.02860 (86082024)	0.02955 (86082024)	0.03025 (86082024)
20.0	0.02422 (86072324)	0.02488 (86072324)	0.02514 (86072324)	0.02509 (86072324)	0.02480 (86072324)
30.0	0.02195c(86081924)	0.02185c(86081924)	0.02148c(86081924)	0.02090c(86081924)	0.02019c(86081924)
40.0	0.02433 (86080424)	0.02239 (86080424)	0.02146 (86070224)	0.02150 (86070224)	0.02133 (86070224)
50.0	0.02270 (86100424)	0.02240 (86100424)	0.02193 (86100424)	0.02137 (86100424)	0.02093 (86112024)
60.0	0.02921 (86100424)	0.02766 (86100424)	0.02594 (86100424)	0.02420 (86100424)	0.02251 (86100424)
70.0	0.04218c(86081824)	0.04138c(86081824)	0.04019c(86081824)	0.03881c(86081824)	0.03733c(86081824)
80.0	0.02096c(86071924)	0.01979c(86071924)	0.01858c(86071924)	0.01737c(86071924)	0.01621c(86071924)
90.0	0.02812c(86071924)	0.02745c(86071924)	0.02674c(86071924)	0.02604c(86071924)	0.02539c(86071924)
100.0	0.02303c(86071924)	0.02230c(86071924)	0.02140c(86071924)	0.02041c(86071924)	0.01939c(86071924)
110.0	0.04005 (86042924)	0.03894 (86042924)	0.03756 (86042924)	0.03605 (86042924)	0.03449 (86042924)
120.0	0.03091c(86052224)	0.02927c(86052224)	0.02749c(86052224)	0.02569c(86052224)	0.02494 (86022024)
130.0	0.02999c(86012824)	0.02981c(86012824)	0.02923c(86012824)	0.02840c(86012824)	0.02740c(86012824)
140.0	0.02111 (86042824)	0.01994 (86042824)	0.01873 (86042824)	0.01871 (86032124)	0.01871 (86032124)
150.0	0.03690 (86101624)	0.03490 (86101624)	0.03272 (86101624)	0.03049 (86101624)	0.02829 (86101624)
160.0	0.03478 (86101624)	0.03625 (86101624)	0.03744 (86101624)	0.03827 (86101624)	0.03881 (86101624)
170.0	0.02984 (86120524)	0.03232 (86120524)	0.03428 (86120524)	0.03555 (86120524)	0.03629 (86120524)
180.0	0.02896 (86110324)	0.02871 (86110324)	0.02868 (86122824)	0.03035 (86122824)	0.03162 (86122824)
190.0	0.01737 (86102124)	0.01703c(86111324)	0.01674c(86111324)	0.01725c(86122624)	0.01817c(86122624)
200.0	0.02377 (86120424)	0.02272 (86102824)	0.02364 (86102824)	0.02435 (86102824)	0.02491 (86102824)
210.0	0.02519c(86111324)	0.02402c(86111324)	0.02283c(86111324)	0.02162c(86111324)	0.02085 (86101924)
220.0	0.02991 (86060524)	0.02922 (86060524)	0.02945 (86010824)	0.03012 (86010824)	0.03048 (86010824)
230.0	0.02684 (86010924)	0.02823 (86010924)	0.02926 (86010924)	0.02995 (86010924)	0.03035 (86010924)
240.0	0.02780 (86010924)	0.02923 (86010924)	0.03031 (86010924)	0.03105 (86010924)	0.03150 (86010924)
250.0	0.02811 (86091524)	0.02673 (86091524)	0.02538 (86091524)	0.02412 (86091524)	0.02294 (86091524)
260.0	0.02071 (86121424)	0.02035 (86121424)	0.02048c(86091024)	0.02072c(86091024)	0.02083c(86091024)
270.0	0.02263c(86051324)	0.02237 (86051524)	0.02256 (86051524)	0.02254 (86051524)	0.02235 (86051524)
280.0	0.02560 (86062324)	0.02435 (86062324)	0.02311 (86062324)	0.02192 (86062324)	0.02157 (86040424)
290.0	0.02687 (86062324)	0.02601 (86062324)	0.02512 (86062324)	0.02427 (86062324)	0.02342 (86062324)
300.0	0.03256 (86030924)	0.03352 (86030924)	0.03399 (86030924)	0.03417 (86030924)	0.03392 (86030924)
310.0	0.02694 (86122324)	0.02830 (86122324)	0.02923 (86122324)	0.02982 (86122324)	0.03004 (86122324)
320.0	0.02320 (86081124)	0.02192 (86081124)	0.02065 (86081124)	0.01945 (86081124)	0.01832 (86081124)
330.0	0.02791 (86031324)	0.02941 (86031324)	0.03055 (86031324)	0.03136 (86031324)	0.03185 (86031324)
340.0	0.03392 (86031224)	0.03363 (86031224)	0.03293 (86031224)	0.03196 (86031224)	0.03081 (86031224)
350.0	0.02752 (86100924)	0.02643 (86100924)	0.02535 (86100924)	0.02433 (86100924)	0.02337 (86100924)
360.0	0.02867c(86071324)	0.02821 (86112624)	0.02772 (86112624)	0.02707 (86112624)	0.02776 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	0.03070 (86082024)	0.03093 (86082024)	0.03098 (86082024)
20.0	0.02431 (86072324)	0.02371 (86072324)	0.02303 (86072324)
30.0	0.01962 (86072824)	0.01952 (86071024)	0.01948 (86071024)
40.0	0.02103 (86070224)	0.02060 (86070224)	0.02012 (86021024)
50.0	0.02122 (86112024)	0.02133 (86112024)	0.02131 (86112024)
60.0	0.02092 (86100424)	0.01968c(86031124)	0.01916c(86031124)
70.0	0.03584c(86081824)	0.03436c(86081824)	0.03294c(86081824)
80.0	0.01512c(86071924)	0.01446c(86081824)	0.01411c(86081824)
90.0	0.02479c(86071924)	0.02425c(86071924)	0.02377c(86071924)
100.0	0.01837c(86071924)	0.01738c(86071924)	0.01643c(86071924)
110.0	0.03295 (86042924)	0.03145 (86042924)	0.03001 (86042924)
120.0	0.02475 (86022024)	0.02446 (86022024)	0.02409 (86022024)
130.0	0.02632c(86012824)	0.02520c(86012824)	0.02408c(86012824)
140.0	0.01858 (86032124)	0.01834 (86032124)	0.01827 (86122924)
150.0	0.02619 (86101624)	0.02420 (86101624)	0.02236 (86101624)
160.0	0.03910 (86101624)	0.03915 (86101624)	0.03901 (86101624)
170.0	0.03658 (86120524)	0.03651 (86120524)	0.03614 (86120524)
180.0	0.03251 (86122824)	0.03306 (86122824)	0.03324 (86122824)
190.0	0.01891c(86122624)	0.01947c(86122624)	0.01979c(86122624)
200.0	0.02532 (86102824)	0.02561 (86102824)	0.02560 (86102824)
210.0	0.02057 (86101924)	0.02031 (86010724)	0.02020 (86010724)
220.0	0.03056 (86010824)	0.03042 (86010824)	0.02990 (86010824)
230.0	0.03051 (86010924)	0.03043 (86010924)	0.02997 (86010924)
240.0	0.03170 (86010924)	0.03162 (86010924)	0.03121 (86010924)
250.0	0.02185 (86091524)	0.02083 (86091524)	0.01985 (86091524)
260.0	0.02083c(86091024)	0.02067c(86091024)	0.02033c(86091024)
270.0	0.02205 (86051524)	0.02161 (86051524)	0.02103 (86051524)
280.0	0.02123 (86040424)	0.02076 (86040424)	0.02015 (86040424)
290.0	0.02260 (86062324)	0.02181 (86062324)	0.02098 (86062324)
300.0	0.03342 (86030924)	0.03273 (86030924)	0.03174 (86030924)
310.0	0.02999 (86122324)	0.02973 (86122324)	0.02909 (86122324)
320.0	0.01729 (86081124)	0.01634 (86081124)	0.01545 (86081124)
330.0	0.03209 (86031324)	0.03215 (86031324)	0.03190 (86031324)
340.0	0.02955 (86031224)	0.02825 (86031224)	0.02692 (86031224)
350.0	0.02247 (86100924)	0.02163 (86100924)	0.02082 (86100924)
360.0	0.02903 (86082024)	0.03008 (86082024)	0.03093 (86082024)

*** ISCST2 - VERSION 93109 ***   *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***   04/25/95
*** TDI 24-hr Average Emissions ***   15:15:23
PAGE 13

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	0.01406	(86010824)	15.24	0.00	0.01278	(86010824)
30.48	0.00	0.01079c	(86082324)	45.72	0.00	0.00953c	(86082324)
60.96	0.00	0.00969	(86120424)	76.20	0.00	0.01121c	(86111324)
91.44	0.00	0.01189c	(86111324)	106.68	0.00	0.01123	(86120624)
121.92	0.00	0.01140	(86120624)	137.16	0.00	0.01383	(86120524)
152.40	0.00	0.01786	(86120524)	167.64	0.00	0.01241	(86120524)
182.88	0.00	0.01652	(86011124)	198.12	0.00	0.01831	(86011124)
213.36	0.00	0.01178	(86011124)	213.36	15.24	0.00970	(86011124)
213.36	30.48	0.00949	(86032124)	213.36	45.72	0.00985	(86032124)
213.36	60.96	0.01309c	(86012824)	213.36	76.20	0.01341c	(86012824)
213.36	91.44	0.00965c	(86012824)	213.36	106.68	0.00726c	(86012824)
213.36	121.92	0.01378	(86011324)	213.36	137.16	0.00917	(86011324)
213.36	152.40	0.00917	(86012724)	213.36	167.64	0.00923c	(86041624)
213.36	182.88	0.00882	(86011924)	213.36	198.12	0.00959	(86022724)
213.36	213.36	0.01125	(86030424)	213.36	220.98	0.00917	(86030424)
198.12	220.98	0.00887	(86030324)	182.88	220.98	0.00695	(86021024)
167.64	220.98	0.00563	(86072824)	152.40	220.98	0.00253	(86072924)
137.16	220.98	0.00220c	(86121124)	121.92	220.98	0.00355	(86031324)
106.68	220.98	0.00570	(86031324)	91.44	220.98	0.00383	(86071724)
76.20	220.98	0.00669	(86071724)	60.96	220.98	0.00961	(86030924)
45.72	220.98	0.01584	(86030924)	30.48	220.98	0.01812	(86030924)
15.24	220.98	0.01673	(86030924)	0.00	220.98	0.01535	(86040624)
0.00	213.36	0.01540c	(86080924)	0.00	198.12	0.01587c	(86093024)
0.00	182.88	0.01573	(86043024)	0.00	167.64	0.01350	(86043024)
0.00	152.40	0.00897	(86051624)	0.00	137.16	0.00711c	(86060124)
0.00	121.92	0.00927	(86091524)	0.00	106.68	0.00918	(86091524)
0.00	91.44	0.00967	(86062624)	0.00	76.20	0.01060	(86062624)
0.00	60.96	0.01059	(86062624)	0.00	45.72	0.01089c	(86051724)
0.00	30.48	0.01254	(86010824)	0.00	15.24	0.01427	(86010824)

*** ISCST2 - VERSION 93109 ***   *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***   04/25/95
*** TDI 24-hr Average Emissions ***   15:15:23

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FOAMLINE, REBND_20, REBND_21,

** CONC OF TDI_24 IN MICROGRAMS/M**3 **

RANK	CONC (YYMMDDHH) AT	RECEPTOR (XR,	YR)	OF TYPE	RANK	CONC (YYMMDDHH) AT	RECEPTOR (XR,	YR)	OF TYPE
1.	0.04229c(86081824) AT (	670.50,	315.85)	GP	26.	0.03658 (86120524) AT (	262.96,	-775.69)	GP
2.	0.04218c(86081824) AT (	717.48,	332.95)	GP	27.	0.03651 (86120524) AT (	271.65,	-824.93)	GP
3.	0.04138c(86081824) AT (	764.46,	350.05)	GP	28.	0.03631 (86040624) AT (	-123.13,	303.48)	GP
4.	0.04131c(86081824) AT (	623.51,	298.75)	GP	29.	0.03629 (86120524) AT (	254.28,	-726.45)	GP
5.	0.04069 (86042924) AT (	670.50,	-94.57)	GP	30.	0.03625 (86101624) AT (	346.09,	-547.14)	GP
6.	0.04054 (86042924) AT (	623.51,	-77.47)	GP	31.	0.03614 (86120524) AT (	280.33,	-874.17)	GP
7.	0.04019c(86081824) AT (	811.45,	367.16)	GP	32.	0.03605 (86042924) AT (	858.43,	-162.98)	GP
8.	0.04005 (86042924) AT (	717.48,	-111.67)	GP	33.	0.03599 (86040624) AT (	-161.44,	335.62)	GP
9.	0.03949 (86101624) AT (	381.68,	-365.67)	GP	34.	0.03589 (86042924) AT (	529.54,	-43.27)	GP
10.	0.03947 (86101624) AT (	356.68,	-322.37)	GP	35.	0.03584c(86081824) AT (	952.40,	418.46)	GP
11.	0.03915 (86101624) AT (	431.60,	-782.07)	GP	36.	0.03559c(86071324) AT (	167.46,	455.32)	GP
12.	0.03912 (86042924) AT (	576.53,	-60.37)	GP	37.	0.03555 (86120524) AT (	245.60,	-677.21)	GP
13.	0.03910 (86101624) AT (	414.50,	-735.08)	GP	38.	0.03526c(86071324) AT (	176.14,	504.56)	GP
14.	0.03901 (86101624) AT (	448.70,	-829.05)	GP	39.	0.03496 (86101624) AT (	306.68,	-235.77)	GP
15.	0.03894 (86042924) AT (	764.46,	-128.77)	GP	40.	0.03490 (86101624) AT (	456.68,	-495.58)	GP
16	0.03881 (86101624) AT (	397.40,	-688.10)	GP	41.	0.03478 (86101624) AT (	328.99,	-500.16)	GP
1[illegible]	0.03881c(86081824) AT (	858.43,	384.26)	GP	42.	0.03449 (86042924) AT (	905.42,	-180.08)	GP
18.	0.03868c(86081824) AT (	576.53,	281.65)	GP	43.	0.03436c(86081824) AT (	999.39,	435.56)	GP
19.	0.03852 (86101624) AT (	406.68,	-408.98)	GP	44.	0.03432c(86071324) AT (	106.68,	510.64)	GP
20.	0.03827 (86101624) AT (	380.30,	-641.11)	GP	45.	0.03428 (86120524) AT (	236.92,	-627.97)	GP
21.	0.03805 (86101624) AT (	331.68,	-279.07)	GP	46.	0.03417 (86030924) AT (	-586.14,	510.64)	GP
22.	0.03756 (86042924) AT (	811.45,	-145.88)	GP	47.	0.03411 (86040624) AT (	-196.43,	285.64)	GP
23.	0.03744 (86101624) AT (	363.20,	-594.13)	GP	48.	0.03401c(86071324) AT (	106.68,	560.64)	GP
24.	0.03733c(86081824) AT (	905.42,	401.36)	GP	49.	0.03400 (86040624) AT (	-199.74,	367.76)	GP
25.	0.03690 (86101624) AT (	431.68,	-452.28)	GP	50.	0.03399 (86030924) AT (	-542.84,	485.64)	GP

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

```
*** ISCST2 - VERSION 93109 ***     *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks  ***        04/25/95
                                   *** TDI 24-hr Average Emissions                                          ***        15:15:23
                                                                                                                       PAGE  15
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT        DFAULT

                                            *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                     ** CONC OF TDI_24    IN MICROGRAMS/M**3                          **

                                                     DATE                                                                NETWORK
GROUP ID                         AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS     0.04229c ON 86081824: AT (    670.50,      315.85,       0.00,       0.00)  GP    POLAR_1


*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
                     BD = BOUNDARY
```

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 328 Informational Message(s)

A Total of 328 Calm Hours Identified

********* FATAL ERROR MESSAGES *********
*** NONE ***

********* WARNING MESSAGES *********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

APPENDIX J

ISCST2 OUTPUT LISTING

1,1,1-TRICHLOROETHANE 24-HOUR AVERAGE EMISSIONS

RUN: FMX11124

```
ISCST2 - (DATED 93109)

IBM-PC VERSION (2.11 ) ISCST2F
(C) COPYRIGHT 1992, TRINITY CONSULTANTS, INC.
SERIAL NUMBER 10573 SOLD TO CROSS, TESSITORE & ASSOC.

Run Began on  4/25/1995 at 15:38:43


*** TRINITY SOURCE FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXSRC.PNT
*** TRINITY DOWNWASH FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXBPIP.WAK
*** TRINITY RECEPTOR FILE NAME: D:\MODELDAT\ISCST2\FMXTEMP\FMXREC.REC
CO STARTING
CO TITLEONE Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks
CO TITLETWO 1,1,1-Trichloroethane 24-hr Average Emissions
CO MODELOPT DFAULT CONC RURAL
CO AVERTIME 24
CO POLLUTID 111_24
CO TERRHGTS FLAT
CO ELEVUNIT FEET
CO RUNORNOT RUN
CO FINISHED
SO STARTING
SO LOCATION EXFAN_3 POINT    108.51     97.23      0.00
SO SRCPARAM EXFAN_3 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_4 POINT    108.51    110.64      0.00
SO SRCPARAM EXFAN_4 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_5 POINT    108.51    119.79      0.00
SO SRCPARAM EXFAN_5 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_6 POINT    108.51    135.64      0.00
SO SRCPARAM EXFAN_6 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_7 POINT    108.51    152.71      0.00
SO SRCPARAM EXFAN_7 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_8 POINT    108.51    168.86      0.00
SO SRCPARAM EXFAN_8 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_9 POINT    108.51    183.79      0.00
SO SRCPARAM EXFAN_9 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_10 POINT    108.51    192.94      0.00
SO SRCPARAM EXFAN_10 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_11 POINT    147.52     97.23      0.00
SO SRCPARAM EXFAN_11 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_12 POINT    147.52    110.64      0.00
SO SRCPARAM EXFAN_12 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_13 POINT    147.52    119.79      0.00
SO SRCPARAM EXFAN_13 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_14 POINT    147.52    135.64      0.00
SO SRCPARAM EXFAN_14 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_15 POINT    147.52    152.71      0.00
SO SRCPARAM EXFAN_15 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_16 POINT    147.52    168.86      0.00
SO SRCPARAM EXFAN_16 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_17 POINT    147.52    183.79      0.00
SO SRCPARAM EXFAN_17 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_18 POINT    147.52    192.94      0.00
SO SRCPARAM EXFAN_18 0.018529     16.15    299.82    24.6109     1.105
SO LOCATION EXFAN_19 POINT    182.88    102.56      0.00
SO SRCPARAM EXFAN_19 0.018529     16.15    299.82    24.6109     1.105
```

```
SO BUILDHGT EXFAN_3   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_3   12.19   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_3   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDHGT EXFAN_3   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_3   12.19   12.19   12.19   15.24   15.24   15.24
SO BUILDHGT EXFAN_3   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDWID  EXFAN_3    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_3    101.55  104.18  103.63   76.71   85.56   91.81
SO BUILDWID  EXFAN_3     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDWID  EXFAN_3    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_3     39.97   39.64   38.10   76.71   85.56   91.81
SO BUILDWID  EXFAN_3     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDHGT EXFAN_4   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_4   10.67   12.19   12.19   12.19   15.24   15.24
SO BUILDHGT EXFAN_4   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDHGT EXFAN_4   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_4   10.67   12.19   12.19   12.19   15.24   15.24
SO BUILDHGT EXFAN_4   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDWID  EXFAN_4    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_4    146.50  104.18  103.63  114.23   85.56   91.81
SO BUILDWID  EXFAN_4     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDWID  EXFAN_4    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_4    146.50   39.64   38.10   39.64   85.56   91.81
SO BUILDWID  EXFAN_4     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDHGT EXFAN_5   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_5   10.67   10.67   12.19   12.19   15.24   15.24
SO BUILDHGT EXFAN_5   10.67   10.67   10.67   12.19   12.19   10.67
SO BUILDHGT EXFAN_5   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_5   10.67   10.67   12.19   12.19   15.24   15.24
SO BUILDHGT EXFAN_5   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDWID  EXFAN_5    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_5    146.50  135.51  103.63  114.23   85.56   91.81
SO BUILDWID  EXFAN_5    150.26  148.19  141.62  101.32   87.04   97.54
SO BUILDWID  EXFAN_5    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_5    146.50  135.51   38.10   39.64   85.56   91.81
SO BUILDWID  EXFAN_5     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDHGT EXFAN_6   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_6   10.67   10.67   10.67   12.19   10.67   10.67
SO BUILDHGT EXFAN_6   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_6   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_6   10.67   10.67   10.67   12.19   12.19   15.24
SO BUILDHGT EXFAN_6   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDWID  EXFAN_6    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_6    146.50  135.51  120.40  114.23  140.77  147.76
SO BUILDWID  EXFAN_6    150.26  148.19  141.62  130.75  115.90   97.54
SO BUILDWID  EXFAN_6    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_6    146.50  135.51  120.40   39.64   39.97   91.81
SO BUILDWID  EXFAN_6     95.26   95.83   93.48   88.29   80.42   97.54
SO BUILDHGT EXFAN_7   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_7   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_7   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_7   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_7   10.67   10.67   10.67   10.67   10.67   10.67
SO BUILDHGT EXFAN_7   15.24   15.24   15.24   15.24   15.24   10.67
SO BUILDWID  EXFAN_7    116.96  132.83  144.67  152.11  154.93  153.04
SO BUILDWID  EXFAN_7    146.50  135.51  120.40  129.50  140.77  147.76
SO BUILDWID  EXFAN_7    150.26  148.19  141.62  130.75  115.90   97.54
```

```
SO BUILDWID  EXFAN_7     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_7     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_7      95.26    95.83    93.48    88.29    80.42    97.54
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_8    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_8     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_8     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_8     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_8     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_9    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_9     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_9     116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_9     146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_9     150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_10    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_10    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_10    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_10    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_10    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_10    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_10    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_11    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_11    15.24    12.19    12.19    15.24    15.24    15.24
SO BUILDHGT EXFAN_11    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_11    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_11    15.24    12.19    12.19    15.24    15.24    15.24
SO BUILDHGT EXFAN_11    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_11     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_11     85.56   104.18   103.63    76.71    85.56    91.81
SO BUILDWID  EXFAN_11     95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  EXFAN_11     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_11     85.56    39.64    38.10    76.71    85.56    91.81
SO BUILDWID  EXFAN_11     95.26    95.83    93.48    88.29    80.42    70.11
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    12.19
SO BUILDHGT EXFAN_12    12.19    12.19    12.19    12.19    12.19    15.24
SO BUILDHGT EXFAN_12    15.24    15.24    15.24    15.24    15.24    15.24
```

SO	BUILDWID	EXFAN_12	80.42	88.29	93.48	95.83	95.26	39.09
SO	BUILDWID	EXFAN_12	39.97	39.64	103.63	114.23	39.97	91.81
SO	BUILDWID	EXFAN_12	95.26	95.83	93.48	88.29	80.42	70.11
SO	BUILDWID	EXFAN_12	80.42	88.29	93.48	95.83	95.26	39.09
SO	BUILDWID	EXFAN_12	39.97	39.64	38.10	39.64	39.97	91.81
SO	BUILDWID	EXFAN_12	95.26	95.83	93.48	88.29	80.42	70.11
SO	BUILDHGT	EXFAN_13	15.24	15.24	15.24	15.24	10.67	10.67
SO	BUILDHGT	EXFAN_13	10.67	12.19	12.19	12.19	12.19	12.19
SO	BUILDHGT	EXFAN_13	15.24	15.24	15.24	15.24	12.19	12.19
SO	BUILDHGT	EXFAN_13	15.24	15.24	15.24	15.24	10.67	10.67
SO	BUILDHGT	EXFAN_13	10.67	12.19	12.19	12.19	12.19	12.19
SO	BUILDHGT	EXFAN_13	15.24	15.24	15.24	15.24	15.24	15.24
SO	BUILDWID	EXFAN_13	80.42	88.29	93.48	95.83	154.93	153.04
SO	BUILDWID	EXFAN_13	146.50	39.64	103.63	114.23	121.36	124.80
SO	BUILDWID	EXFAN_13	95.26	95.83	93.48	88.29	87.04	70.11
SO	BUILDWID	EXFAN_13	80.42	88.29	93.48	95.83	154.93	153.04
SO	BUILDWID	EXFAN_13	146.50	39.64	38.10	39.64	39.97	39.09
SO	BUILDWID	EXFAN_13	95.26	95.83	93.48	88.29	80.42	70.11
SO	BUILDHGT	EXFAN_14	15.24	15.24	15.24	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_14	10.67	10.67	10.67	10.67	12.19	12.19
SO	BUILDHGT	EXFAN_14	12.19	15.24	10.67	12.19	12.19	12.19
SO	BUILDHGT	EXFAN_14	12.19	12.19	15.24	10.97	10.97	10.67
SO	BUILDHGT	EXFAN_14	10.67	10.67	10.67	10.67	12.19	12.19
SO	BUILDHGT	EXFAN_14	12.19	15.24	15.24	15.24	15.24	15.24
SO	BUILDWID	EXFAN_14	80.42	88.29	93.48	152.11	154.93	153.04
SO	BUILDWID	EXFAN_14	146.50	135.51	120.40	129.50	121.36	124.80
SO	BUILDWID	EXFAN_14	124.45	95.83	141.62	101.32	87.04	70.11
SO	BUILDWID	EXFAN_14	80.42	88.29	93.48	24.97	24.41	153.04
SO	BUILDWID	EXFAN_14	146.50	135.51	120.40	129.50	39.97	39.09
SO	BUILDWID	EXFAN_14	37.02	95.83	93.48	88.29	80.42	70.11
SO	BUILDHGT	EXFAN_15	15.24	15.24	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_15	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_15	12.19	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_15	12.19	12.19	10.67	10.97	10.97	10.97
SO	BUILDHGT	EXFAN_15	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_15	12.19	12.19	15.24	15.24	15.24	15.24
SO	BUILDWID	EXFAN_15	80.42	88.29	144.67	152.11	154.93	153.04
SO	BUILDWID	EXFAN_15	146.50	135.51	120.40	129.50	140.77	147.76
SO	BUILDWID	EXFAN_15	124.45	148.19	141.62	130.75	115.90	97.54
SO	BUILDWID	EXFAN_15	80.42	88.29	144.67	24.97	24.41	23.11
SO	BUILDWID	EXFAN_15	146.50	135.51	120.40	129.50	140.77	147.76
SO	BUILDWID	EXFAN_15	37.02	33.83	93.48	88.29	80.42	70.11
SO	BUILDHGT	EXFAN_16	12.19	12.19	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_16	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_16	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_16	10.67	10.67	10.67	10.67	10.97	10.97
SO	BUILDHGT	EXFAN_16	10.97	10.97	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_16	10.67	12.19	12.19	12.19	12.19	12.19
SO	BUILDWID	EXFAN_16	80.42	88.29	144.67	152.11	154.93	153.04
SO	BUILDWID	EXFAN_16	146.50	135.51	120.40	129.50	140.77	147.76
SO	BUILDWID	EXFAN_16	150.26	148.19	141.62	130.75	115.90	97.54
SO	BUILDWID	EXFAN_16	116.96	132.83	144.67	152.11	24.41	23.11
SO	BUILDWID	EXFAN_16	21.10	18.45	120.40	129.50	140.77	147.76
SO	BUILDWID	EXFAN_16	150.26	33.83	29.61	24.49	87.04	70.11
SO	BUILDHGT	EXFAN_17	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_17	10.67	10.67	10.67	10.67	10.67	10.67
SO	BUILDHGT	EXFAN_17	10.67	10.67	10.67	10.67	10.67	10.67

```
SO BUILDHGT EXFAN_17    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_17    10.97    10.97    10.97    10.97    10.97    10.67
SO BUILDHGT EXFAN_17    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_17    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_17    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_17    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_17    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_17     21.10    18.45    15.24    18.45    21.10   147.76
SO BUILDWID  EXFAN_17    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_18    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDHGT EXFAN_18    10.67    10.67    10.97    10.97    10.97    10.97
SO BUILDHGT EXFAN_18    10.67    10.67    10.67    10.67    10.67    10.67
SO BUILDWID  EXFAN_18    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_18    146.50   135.51   120.40   129.50   140.77   147.76
SO BUILDWID  EXFAN_18    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDWID  EXFAN_18    116.96   132.83   144.67   152.11   154.93   153.04
SO BUILDWID  EXFAN_18    146.50   135.51    15.24    18.45    21.10    23.11
SO BUILDWID  EXFAN_18    150.26   148.19   141.62   130.75   115.90    97.54
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    15.24    15.24    15.24    15.24    15.24
SO BUILDHGT EXFAN_19    15.24    12.19    12.19    12.19    12.19    12.19
SO BUILDHGT EXFAN_19    12.19    15.24    15.24    15.24    15.24    15.24
SO BUILDWID  EXFAN_19     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19     85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  EXFAN_19     37.02    95.83    93.48    88.29    80.42    70.11
SO BUILDWID  EXFAN_19     80.42    88.29    93.48    95.83    95.26    91.81
SO BUILDWID  EXFAN_19     85.56    39.64    38.10    39.64    39.97    39.09
SO BUILDWID  EXFAN_19     37.02    95.83    93.48    88.29    80.42    70.11
SO EMISUNIT 1000000.000000 GRAMS/SEC MICROGRAMS/M**3
SO SRCGROUP ALL
SO FINISHED
RE STARTING
RE GRIDPOLR POLAR_1  STA
RE GRIDPOLR POLAR_1  ORIG 106.68 110.64
RE GRIDPOLR POLAR_1  DIST 150.00 200.00 250.00 300.00
RE GRIDPOLR POLAR_1  DIST 350.00 400.00 450.00 500.00
RE GRIDPOLR POLAR_1  DIST 550.00 600.00 650.00 700.00
RE GRIDPOLR POLAR_1  DIST 750.00 800.00 850.00 900.00
RE GRIDPOLR POLAR_1  DIST 950.00 1000.00
RE GRIDPOLR POLAR_1  GDIR 36 10.00 10.00
RE GRIDPOLR POLAR_1  END
RE DISCCART 0.00 0.00
RE DISCCART 15.24 0.00
RE DISCCART 30.48 0.00
RE DISCCART 45.72 0.00
RE DISCCART 60.96 0.00
RE DISCCART 76.20 0.00
RE DISCCART 91.44 0.00
RE DISCCART 106.68 0.00
RE DISCCART 121.92 0.00
RE DISCCART 137.16 0.00
RE DISCCART 152.40 0.00
```

```
RE DISCCART 167.64 0.00
RE DISCCART 182.88 0.00
RE DISCCART 198.12 0.00
RE DISCCART 213.36 0.00
RE DISCCART 213.36 15.24
RE DISCCART 213.36 30.48
RE DISCCART 213.36 45.72
RE DISCCART 213.36 60.96
RE DISCCART 213.36 76.20
RE DISCCART 213.36 91.44
RE DISCCART 213.36 106.68
RE DISCCART 213.36 121.92
RE DISCCART 213.36 137.16
RE DISCCART 213.36 152.40
RE DISCCART 213.36 167.64
RE DISCCART 213.36 182.88
RE DISCCART 213.36 198.12
RE DISCCART 213.36 213.36
RE DISCCART 213.36 220.98
RE DISCCART 198.12 220.98
RE DISCCART 182.88 220.98
RE DISCCART 167.64 220.98
RE DISCCART 152.40 220.98
RE DISCCART 137.16 220.98
RE DISCCART 121.92 220.98
RE DISCCART 106.68 220.98
RE DISCCART 91.44 220.98
RE DISCCART 76.20 220.98
RE DISCCART 60.96 220.98
RE DISCCART 45.72 220.98
RE DISCCART 30.48 220.98
RE DISCCART 15.24 220.98
RE DISCCART 0.00 220.98
RE DISCCART 0.00 213.36
RE DISCCART 0.00 198.12
RE DISCCART 0.00 182.88
RE DISCCART 0.00 167.64
RE DISCCART 0.00 152.40
RE DISCCART 0.00 137.16
RE DISCCART 0.00 121.92
RE DISCCART 0.00 106.68
RE DISCCART 0.00 91.44
RE DISCCART 0.00 76.20
RE DISCCART 0.00 60.96
RE DISCCART 0.00 45.72
RE DISCCART 0.00 30.48
RE DISCCART 0.00 15.24
RE FINISHED
ME STARTING
ME INPUTFIL D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN UNFORM
ME ANEMHGHT   10.000 METERS
ME SURFDATA 12815 1986 ORLANDO
ME UAIRDATA 12842 1986 TAMPA
ME STARTEND 1986 1 1 1 1986 12 31 24
ME FINISHED
OU STARTING
OU RECTABLE 24 FIRST
```

```
OU MAXTABLE 24 50
OU FINISHED

*************************************
*** SETUP Finishes Successfully ***
*************************************
```

```
*** MODELING OPTIONS USED:  CONC   RURAL  FLAT         DFAULT

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
          4. Use Calms Processing Routine.
          5. Not Use Missing Data Processing Routine.
          6. Default Wind Profile Exponents.
          7. Default Vertical Potential Temperature Gradients.
          8. "Upper Bound" Values for Supersquat Buildings.
          9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:  24-HR

**This Run Includes:   17 Source(s);      1 Source Group(s); and    706 Receptor(s)

**The Model Assumes A Pollutant Type of:  111_24

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
        Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
        Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =  0.0000     ;    Rot. Angle =      0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Input Runstream File: D:\MODELDAT\ISCST2\FMXTEMP\FMX11124.DAT ;  **Output Print File: D:\MODELDAT\ISCST2\FMXTEMP\FMX11124.LST
```

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
EXFAN_3	0	0.18529E-01	108.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_4	0	0.18529E-01	108.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_5	0	0.18529E-01	108.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_6	0	0.18529E-01	108.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_7	0	0.18529E-01	108.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_8	0	0.18529E-01	108.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_9	0	0.18529E-01	108.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_10	0	0.18529E-01	108.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_11	0	0.18529E-01	147.5	97.2	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_12	0	0.18529E-01	147.5	110.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_13	0	0.18529E-01	147.5	119.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_14	0	0.18529E-01	147.5	135.6	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_15	0	0.18529E-01	147.5	152.7	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_16	0	0.18529E-01	147.5	168.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_17	0	0.18529E-01	147.5	183.8	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_18	0	0.18529E-01	147.5	192.9	0.0	16.15	299.82	24.61	1.11	YES	
EXFAN_19	0	0.18529E-01	182.9	102.6	0.0	16.15	299.82	24.61	1.11	YES	

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	12.2,	101.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_5

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_6

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	12.2,	114.2,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_8

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_9

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_10

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_11

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	104.2,	0	9	12.2,	103.6,	0	10	15.2,	76.7,	0	11	15.2,	85.6,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	15.2,	76.7,	0	29	15.2,	85.6,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_12

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	12.2,	39.1,	0
7	12.2,	40.0,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	40.0,	0	12	15.2,	91.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	12.2,	39.1,	0
25	12.2,	40.0,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	15.2,	91.8,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_13

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	12.2,	39.6,	0	9	12.2,	103.6,	0	10	12.2,	114.2,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	15.2,	95.3,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	15.2,	95.3,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_14

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	12.2,	121.4,	0	12	12.2,	124.8,	0
13	12.2,	124.5,	0	14	15.2,	95.8,	0	15	10.7,	141.6,	0	16	12.2,	101.3,	0	17	12.2,	87.0,	0	18	12.2,	70.1,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	15.2,	93.5,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_15

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	12.2,	124.5,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	12.2,	80.4,	0	20	12.2,	88.3,	0	21	10.7,	144.7,	0	22	11.0,	25.0,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	12.2,	37.0,	0	32	12.2,	33.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

SOURCE ID: EXFAN_16

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.2,	80.4,	0	2	12.2,	88.3,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	11.0,	24.4,	0	24	11.0,	23.1,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	10.7,	120.4,	0	28	10.7,	129.5,	0	29	10.7,	140.8,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	12.2,	33.8,	0	33	12.2,	29.6,	0	34	12.2,	24.5,	0	35	12.2,	87.0,	0	36	12.2,	70.1,	0

SOURCE ID: EXFAN_17

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	11.0,	21.1,	0	26	11.0,	18.4,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	10.7,	147.8,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

SOURCE ID: EXFAN_18

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	10.7,	117.0,	0	2	10.7,	132.8,	0	3	10.7,	144.7,	0	4	10.7,	152.1,	0	5	10.7,	154.9,	0	6	10.7,	153.0,	0
7	10.7,	146.5,	0	8	10.7,	135.5,	0	9	10.7,	120.4,	0	10	10.7,	129.5,	0	11	10.7,	140.8,	0	12	10.7,	147.8,	0
13	10.7,	150.3,	0	14	10.7,	148.2,	0	15	10.7,	141.6,	0	16	10.7,	130.8,	0	17	10.7,	115.9,	0	18	10.7,	97.5,	0
19	10.7,	117.0,	0	20	10.7,	132.8,	0	21	10.7,	144.7,	0	22	10.7,	152.1,	0	23	10.7,	154.9,	0	24	10.7,	153.0,	0
25	10.7,	146.5,	0	26	10.7,	135.5,	0	27	11.0,	15.2,	0	28	11.0,	18.4,	0	29	11.0,	21.1,	0	30	11.0,	23.1,	0
31	10.7,	150.3,	0	32	10.7,	148.2,	0	33	10.7,	141.6,	0	34	10.7,	130.8,	0	35	10.7,	115.9,	0	36	10.7,	97.5,	0

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: EXFAN_19

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	15.2,	80.4,	0	2	15.2,	88.3,	0	3	15.2,	93.5,	0	4	15.2,	95.8,	0	5	15.2,	95.3,	0	6	15.2,	91.8,	0
7	15.2,	85.6,	0	8	12.2,	39.6,	0	9	12.2,	38.1,	0	10	12.2,	39.6,	0	11	12.2,	40.0,	0	12	12.2,	39.1,	0
13	12.2,	37.0,	0	14	15.2,	95.8,	0	15	15.2,	93.5,	0	16	15.2,	88.3,	0	17	15.2,	80.4,	0	18	15.2,	70.1,	0
19	15.2,	80.4,	0	20	15.2,	88.3,	0	21	15.2,	93.5,	0	22	15.2,	95.8,	0	23	15.2,	95.3,	0	24	15.2,	91.8,	0
25	15.2,	85.6,	0	26	12.2,	39.6,	0	27	12.2,	38.1,	0	28	12.2,	39.6,	0	29	12.2,	40.0,	0	30	12.2,	39.1,	0
31	12.2,	37.0,	0	32	15.2,	95.8,	0	33	15.2,	93.5,	0	34	15.2,	88.3,	0	35	15.2,	80.4,	0	36	15.2,	70.1,	0

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

*** ORIGIN FOR POLAR NETWORK ***
X-ORIG = 106.68 ; Y-ORIG = 110.64 (METERS)

*** DISTANCE RANGES OF NETWORK ***
(METERS)

150.0,	200.0,	250.0,	300.0,	350.0,	400.0,	450.0,	500.0,	550.0,	600.0,
650.0,	700.0,	750.0,	800.0,	850.0,	900.0,	950.0,	1000.0,		

*** DIRECTION RADIALS OF NETWORK ***
(DEGREES)

10.0,	20.0,	30.0,	40.0,	50.0,	60.0,	70.0,	80.0,	90.0,	100.0,
110.0,	120.0,	130.0,	140.0,	150.0,	160.0,	170.0,	180.0,	190.0,	200.0,
210.0,	220.0,	230.0,	240.0,	250.0,	260.0,	270.0,	280.0,	290.0,	300.0,
310.0,	320.0,	330.0,	340.0,	350.0,	360.0,				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(	0.0,	0.0,	0.0,	0.0);	(	15.2,	0.0,	0.0,	0.0);
(	30.5,	0.0,	0.0,	0.0);	(	45.7,	0.0,	0.0,	0.0);
(	61.0,	0.0,	0.0,	0.0);	(	76.2,	0.0,	0.0,	0.0);
(	91.4,	0.0,	0.0,	0.0);	(	106.7,	0.0,	0.0,	0.0);
(	121.9,	0.0,	0.0,	0.0);	(	137.2,	0.0,	0.0,	0.0);
(	152.4,	0.0,	0.0,	0.0);	(	167.6,	0.0,	0.0,	0.0);
(	182.9,	0.0,	0.0,	0.0);	(	198.1,	0.0,	0.0,	0.0);
(	213.4,	0.0,	0.0,	0.0);	(	213.4,	15.2,	0.0,	0.0);
(	213.4,	30.5,	0.0,	0.0);	(	213.4,	45.7,	0.0,	0.0);
(	213.4,	61.0,	0.0,	0.0);	(	213.4,	76.2,	0.0,	0.0);
(	213.4,	91.4,	0.0,	0.0);	(	213.4,	106.7,	0.0,	0.0);
(	213.4,	121.9,	0.0,	0.0);	(	213.4,	137.2,	0.0,	0.0);
(	213.4,	152.4,	0.0,	0.0);	(	213.4,	167.6,	0.0,	0.0);
(	213.4,	182.9,	0.0,	0.0);	(	213.4,	198.1,	0.0,	0.0);
(	213.4,	213.4,	0.0,	0.0);	(	213.4,	221.0,	0.0,	0.0);
(	198.1,	221.0,	0.0,	0.0);	(	182.9,	221.0,	0.0,	0.0);
(	167.6,	221.0,	0.0,	0.0);	(	152.4,	221.0,	0.0,	0.0);
(	137.2,	221.0,	0.0,	0.0);	(	121.9,	221.0,	0.0,	0.0);
(	106.7,	221.0,	0.0,	0.0);	(	91.4,	221.0,	0.0,	0.0);
(	76.2,	221.0,	0.0,	0.0);	(	61.0,	221.0,	0.0,	0.0);
(	45.7,	221.0,	0.0,	0.0);	(	30.5,	221.0,	0.0,	0.0);
(	15.2,	221.0,	0.0,	0.0);	(	0.0,	221.0,	0.0,	0.0);
(	0.0,	213.4,	0.0,	0.0);	(	0.0,	198.1,	0.0,	0.0);
(	0.0,	182.9,	0.0,	0.0);	(	0.0,	167.6,	0.0,	0.0);
(	0.0,	152.4,	0.0,	0.0);	(	0.0,	137.2,	0.0,	0.0);
(	0.0,	121.9,	0.0,	0.0);	(	0.0,	106.7,	0.0,	0.0);
(	0.0,	91.4,	0.0,	0.0);	(	0.0,	76.2,	0.0,	0.0);
(	0.0,	61.0,	0.0,	0.0);	(	0.0,	45.7,	0.0,	0.0);
(	0.0,	30.5,	0.0,	0.0);	(	0.0,	15.2,	0.0,	0.0);

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 1.0 METER OR 3*ZLB *
IN DISTANCE. CALCULATIONS MAY NOT BE PERFORMED.

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
EXFAN_10	121.9	221.0	31.08
EXFAN_10	106.7	221.0	28.10
EXFAN_18	152.4	221.0	28.46
EXFAN_18	137.2	221.0	29.89
EXFAN_19	213.4	91.4	32.45
EXFAN_19	213.4	106.7	30.76
EXFAN_19	213.4	121.9	36.11

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 86 1 1 1
AND END DATE: 86 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: D:\MODELDAT\ISCST2\FMXTEMP\ORLPRE86.BIN FORMAT: UNFORM
SURFACE STATION NO.: 12815 UPPER AIR STATION NO.: 12842
NAME: ORLANDO NAME: TAMPA
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN
86	1	1	1	1.0	3.60	289.3	4	639.0	639.0
86	1	1	2	168.0	5.14	288.7	4	639.0	639.0
86	1	1	3	124.0	3.09	288.2	4	639.0	639.0
86	1	1	4	353.0	2.57	288.2	4	639.0	639.0
86	1	1	5	333.0	2.57	288.7	4	639.0	639.0
86	1	1	6	332.0	2.57	288.7	4	639.0	639.0
86	1	1	7	335.0	3.09	288.7	4	639.0	639.0
86	1	1	8	3.0	3.60	289.3	4	639.0	639.0
86	1	1	9	347.0	3.60	289.8	4	639.0	639.0
86	1	1	10	1.0	5.14	292.0	4	639.0	639.0
86	1	1	11	14.0	4.63	292.6	4	639.0	639.0
86	1	1	12	16.0	4.12	294.3	4	639.0	639.0
86	1	1	13	73.0	3.09	295.4	4	639.0	639.0
86	1	1	14	49.0	3.60	297.0	4	639.0	639.0
86	1	1	15	142.0	2.06	296.5	4	639.0	639.0
86	1	1	16	144.0	2.06	295.9	4	639.0	639.0
86	1	1	17	261.0	2.06	295.4	4	639.0	639.0
86	1	1	18	257.0	2.06	292.6	4	644.0	644.0
86	1	1	19	274.0	3.60	291.5	4	655.0	655.0
86	1	1	20	227.0	3.09	290.9	4	666.0	666.0
86	1	1	21	230.0	3.09	290.9	4	678.0	678.0
86	1	1	22	252.0	2.57	290.4	5	689.0	477.0
86	1	1	23	290.0	2.06	290.4	4	700.0	700.0
86	1	1	24	290.0	1.00	290.4	4	712.0	712.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST2 - VERSION 93109 ***   *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks ***   04/25/95
*** 1,1,1-Trichloroethane 24-hr Average Emissions ***   15:38:45
PAGE 14

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 ,
EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 150.00	200.00	250.00	300.00	350.00
10.0	1.90000 (86072924)	2.98237c(86121124)	3.06041c(86121124)	2.77334c(86121124)	2.47159 (86121224)
20.0	2.12422c(86121124)	2.36861 (86072924)	2.21022 (86072924)	2.06316 (86072924)	1.94837 (86011024)
30.0	1.94869 (86072924)	2.16478 (86072924)	2.13473 (86072824)	2.32184 (86072824)	2.37941 (86072824)
40.0	1.95062 (86022724)	2.10809 (86022724)	2.29673 (86072824)	2.25083 (86072824)	2.07988 (86072824)
50.0	1.86406 (86022724)	2.29295 (86022724)	2.32575 (86022724)	2.14617 (86022724)	1.93619 (86073024)
60.0	1.77479 (86022724)	2.18484 (86011924)	2.45558 (86011924)	2.55061 (86011924)	2.47507 (86011924)
70.0	1.54561 (86011924)	2.13512 (86011924)	2.28098 (86011924)	2.21529 (86011924)	2.10020 (86011924)
80.0	1.85721 (86012724)	1.94911 (86012724)	2.02298c(86041624)	2.03919c(86041624)	1.93598c(86041624)
90.0	1.93558 (86012724)	2.21332 (86012724)	2.20330 (86012724)	2.25286c(86041624)	2.15495c(86041624)
100.0	2.08772 (86012724)	2.28625 (86012724)	2.21185 (86012724)	2.05752 (86012724)	1.87486 (86012724)
110.0	1.96431 (86012724)	2.10378 (86042924)	2.76260 (86042924)	3.01228 (86042924)	2.98821 (86042924)
120.0	1.51364c(86012824)	1.96147 (86042624)	2.37740c(86012824)	2.53753c(86012824)	2.47274c(86012824)
130.0	1.58386c(86012824)	2.16944c(86012824)	2.32416c(86012824)	2.36766c(86012824)	2.33954c(86012824)
140.0	2.08191 (86011124)	2.18798 (86032124)	2.35935 (86032124)	2.33237 (86032124)	2.23308 (86032124)
150.0	2.98752 (86011124)	3.41055 (86011124)	3.21906 (86011124)	2.81101 (86011124)	2.65955 (86101624)
160.0	2.13401 (86011124)	2.51345 (86011124)	2.73269 (86011124)	2.88377 (86011124)	2.95864 (86011124)
170.0	2.62923 (86032224)	2.54485 (86032224)	2.39800 (86120524)	2.77155 (86120524)	3.00235 (86120524)
180.0	1.94021 (86032224)	2.43500 (86032224)	2.64217 (86032224)	2.63253 (86032224)	2.52324 (86032224)
190.0	1.97321c(86111324)	2.26829c(86111324)	2.23438c(86111324)	2.07947c(86111324)	1.88568c(86111324)
200.0	2.37577c(86111324)	2.55192c(86111324)	2.54068c(86111324)	2.43150c(86111324)	2.28139c(86111324)
210.0	2.67017 (86010824)	2.74701 (86010824)	2.61067 (86010824)	2.41986 (86010824)	2.22361 (86010824)
220.0	2.21589 (86010824)	2.77587 (86010824)	3.09666 (86010824)	3.22633 (86010824)	3.22944 (86010824)
230.0	1.60167 (86010824)	1.87556 (86010824)	2.08012 (86010824)	2.18324 (86010824)	2.20358 (86010824)
240.0	1.25919 (86101924)	1.48860 (86101924)	1.79371 (86010924)	2.08930 (86010924)	2.30053 (86010924)
250.0	1.20179 (86091524)	1.67942 (86091524)	1.87662 (86091524)	1.88134 (86091524)	1.79028 (86091524)
260.0	1.07788 (86091724)	1.39164 (86091524)	1.62933 (86091524)	1.68198 (86091524)	1.62511 (86091524)
270.0	1.32759c(86050524)	1.70472c(86050524)	1.99309 (86051524)	2.24714 (86051524)	2.34774 (86051524)
280.0	1.93826c(86050524)	2.30006c(86050524)	2.45572c(86050524)	2.39175c(86050524)	2.23653c(86050524)
290.0	2.11337c(86050524)	2.29389c(86050524)	2.21301c(86050524)	2.11367 (86062324)	2.18223 (86062324)
300.0	2.54591 (86030924)	3.02109 (86030924)	3.26184 (86030924)	3.38533 (86030924)	3.42118 (86030924)
310.0	2.33837 (86030924)	2.84806 (86030924)	3.11303 (86030924)	3.16971 (86030924)	3.03421 (86030924)
320.0	1.56542 (86031324)	1.77839 (86031824)	1.99615 (86081124)	2.02794 (86081124)	1.92931 (86081124)
330.0	3.14276 (86031324)	3.87552 (86031324)	4.19113 (86031324)	4.25330 (86031324)	4.19527 (86031324)
340.0	4.14308 (86031324)	4.63414 (86031324)	4.44094 (86031324)	4.02814 (86031324)	3.56078 (86031324)
350.0	3.59141 (86031324)	3.36135 (86031324)	2.75880 (86031324)	2.58662 (86031224)	2.48582 (86031924)
360.0	2.28470 (86031324)	2.44218 (86031924)	2.38605 (86031924)	2.42947 (86112624)	2.48576 (86112624)

*** ISCST2 - VERSION 93109 *** *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks *** 04/25/95
*** 1,1,1-Trichloroethane 24-hr Average Emissions *** 15:38:45
PAGE 15

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 ,
EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 400.00	450.00	500.00	550.00	600.00
10.0	2.44221 (86121224)	2.33909 (86121224)	2.22815 (86082024)	2.15692 (86082024)	2.06248 (86082024)
20.0	1.98759 (86011024)	1.97990 (86011024)	1.93873 (86011024)	1.87470 (86011024)	1.79643 (86011024)
30.0	2.33449 (86072824)	2.22548 (86072824)	2.08917 (86072824)	1.94878 (86072824)	1.81117 (86072824)
40.0	1.85851 (86072824)	1.63789 (86072824)	1.43831 (86072824)	1.29751 (86021024)	1.29109 (86021024)
50.0	1.76618 (86073024)	1.59726 (86073024)	1.44548 (86073024)	1.36916 (86112024)	1.32405 (86112024)
60.0	2.31634 (86011924)	2.13148 (86011924)	1.94951 (86011924)	1.78148 (86011924)	1.63026 (86011924)
70.0	1.97285 (86011924)	1.84546 (86011924)	1.72377 (86011924)	1.64129c(86081824)	1.59812c(86081824)
80.0	1.77235c(86041624)	1.59372c(86041624)	1.43263c(86041624)	1.30496c(86041624)	1.19970c(86041624)
90.0	2.01857c(86041624)	1.88553c(86041624)	1.76538c(86041624)	1.65898c(86041624)	1.56044c(86041624)
100.0	1.69505 (86012724)	1.52893 (86012724)	1.38170 (86012724)	1.25717 (86042224)	1.15129 (86042224)
110.0	2.82489 (86042924)	2.61334 (86042924)	2.39390 (86042924)	2.18553 (86042924)	1.99733 (86042924)
120.0	2.30129c(86012824)	2.09243c(86012824)	1.88341c(86012824)	1.69081c(86012824)	1.57620 (86022024)
130.0	2.24932c(86012824)	2.12920c(86012824)	1.99189c(86012824)	1.84643c(86012824)	1.69805c(86012824)
140.0	2.10505 (86032124)	1.96743 (86032124)	1.82984 (86032124)	1.69747 (86032124)	1.57288 (86032124)
150.0	2.50604 (86101624)	2.28115 (86101624)	2.03802 (86101624)	1.80867 (86032124)	1.69733 (86032124)
160.0	2.97201 (86101624)	3.05711 (86101624)	3.07672 (86101624)	3.04887 (86101624)	2.98699 (86101624)
170.0	3.09605 (86120524)	3.08585 (86120524)	3.00447 (86120524)	2.87904 (86120524)	2.72965 (86120524)
180.0	2.39266 (86120524)	2.50634 (86120524)	2.55777 (86120524)	2.55863 (86120524)	2.52190 (86120524)
190.0	1.68833c(86111324)	1.50358c(86111324)	1.48951 (86120624)	1.49039 (86120624)	1.48001 (86120624)
200.0	2.11970c(86111324)	1.95985c(86111324)	1.80889c(86111324)	1.66938c(86111324)	1.68590 (86102824)
210.0	2.03818 (86010824)	1.86790 (86010824)	1.73378 (86101924)	1.63377 (86101924)	1.53436 (86101924)
220.0	3.15518 (86010824)	3.03493 (86010824)	2.88962 (86010824)	2.73306 (86010824)	2.57416 (86010824)
230.0	2.16608 (86010824)	2.21393 (86010924)	2.24619 (86010924)	2.24152 (86010924)	2.20876 (86010924)
240.0	2.43204 (86010924)	2.49446 (86010924)	2.50243 (86010924)	2.47033 (86010924)	2.41039 (86010924)
250.0	1.76435 (86010924)	1.73055 (86010924)	1.66350 (86010924)	1.57775 (86010924)	1.56005 (86092024)
260.0	1.51687 (86091524)	1.41638 (86032624)	1.39023 (86032624)	1.34220 (86032624)	1.28185 (86032624)
270.0	2.33503 (86051524)	2.25643 (86051524)	2.14371 (86051524)	2.01638 (86051524)	1.88592 (86051524)
280.0	2.12223 (86040424)	2.08910 (86040424)	2.03505 (86040424)	1.96469 (86040424)	1.88400 (86040424)
290.0	2.15140 (86062324)	2.06898 (86062324)	1.96256 (86062324)	1.84819 (86062324)	1.73497 (86062324)
300.0	3.38749 (86030924)	3.30168 (86030924)	3.17728 (86030924)	3.02708 (86030924)	2.86223 (86030924)
310.0	2.78282 (86030924)	2.78215 (86122324)	2.74650 (86122324)	2.66640 (86122324)	2.55882 (86122324)
320.0	1.77624 (86081124)	1.61820 (86031324)	1.52891 (86031324)	1.44190 (86031324)	1.35709 (86031324)
330.0	4.05781 (86031324)	3.87541 (86031324)	3.67270 (86031324)	3.46438 (86031324)	3.25885 (86031324)
340.0	3.10600 (86031324)	2.70228 (86031324)	2.38770 (86031224)	2.21600 (86031224)	2.04092 (86031224)
350.0	2.36295 (86031924)	2.22718 (86031924)	2.09020 (86031924)	1.95829 (86031924)	1.83451 (86031924)
360.0	2.42765 (86112624)	2.35636c(86121124)	2.27984c(86121124)	2.19337c(86121124)	2.26538 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 ,
EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 650.00	700.00	750.00	800.00	850.00
10.0	1.95602 (86082024)	1.84512 (86082024)	1.73477 (86082024)	1.70018 (86072324)	1.70306 (86072324)
20.0	1.71043 (86011024)	1.62138 (86011024)	1.53247 (86011024)	1.44649 (86011024)	1.39709 (86072324)
30.0	1.68110 (86072824)	1.56051 (86072824)	1.44981 (86072824)	1.34967 (86072824)	1.29004 (86071024)
40.0	1.27276 (86021024)	1.24523 (86021024)	1.21098 (86021024)	1.17266 (86021024)	1.13150 (86021024)
50.0	1.27809 (86112024)	1.23249 (86112024)	1.18750 (86112024)	1.17499 (86122024)	1.15854 (86122024)
60.0	1.49549 (86011924)	1.37571 (86011924)	1.26916 (86011924)	1.17691 (86011924)	1.09940 (86011924)
70.0	1.54646c(86081824)	1.49051c(86081824)	1.43274c(86081824)	1.37461c(86081824)	1.31707c(86081824)
80.0	1.11134 (86021924)	1.06079 (86021924)	1.00667 (86021924)	0.95376 (86021924)	0.90210 (86021924)
90.0	1.46615c(86041624)	1.37673c(86041624)	1.31284c(86071924)	1.30734c(86071924)	1.30302c(86071924)
100.0	1.05691 (86012724)	0.98013 (86012724)	0.91490 (86012724)	0.86394 (86012724)	0.86607c(86090624)
110.0	1.83194 (86042924)	1.68911 (86042924)	1.55885 (86042924)	1.45175 (86042924)	1.36216 (86042924)
120.0	1.54231 (86022024)	1.50019 (86022024)	1.45254 (86022024)	1.40137 (86022024)	1.34820 (86022024)
130.0	1.56210c(86012824)	1.43648c(86012824)	1.32179c(86012824)	1.27595 (86102624)	1.29550 (86102624)
140.0	1.50806 (86122924)	1.48166 (86122924)	1.44501 (86122924)	1.40163 (86122924)	1.35415 (86122924)
150.0	1.58982 (86032124)	1.48771 (86032124)	1.39234 (86032124)	1.30351 (86032124)	1.22058 (86032124)
160.0	2.90171 (86101624)	2.80129 (86101624)	2.69197 (86101624)	2.57837 (86101624)	2.46376 (86101624)
170.0	2.57006 (86120524)	2.40921 (86120524)	2.25355 (86120524)	2.10480 (86120524)	1.96490 (86120524)
180.0	2.45900 (86120524)	2.37905 (86120524)	2.29212 (86120524)	2.19905 (86120524)	2.10437 (86120524)
190.0	1.45885 (86120624)	1.43011 (86120624)	1.39473 (86120624)	1.35392 (86120624)	1.31331 (86120624)
200.0	1.69330 (86102824)	1.68929 (86102824)	1.67587 (86102824)	1.65482 (86102824)	1.62768 (86102824)
210.0	1.43856 (86101924)	1.34793 (86101924)	1.26379 (86101924)	1.18529 (86101924)	1.11469 (86101924)
220.0	2.41841 (86010824)	2.26958 (86010824)	2.13173 (86010824)	2.00466 (86010824)	1.89248 (86010824)
230.0	2.15580 (86010924)	2.08911 (86010924)	2.01427 (86010924)	1.93574 (86010924)	1.85559 (86010924)
240.0	2.33224 (86010924)	2.24311 (86010924)	2.15004 (86010924)	2.05576 (86010924)	1.96264 (86010924)
250.0	1.56293 (86092024)	1.55273 (86092024)	1.53209 (86092024)	1.50323 (86092024)	1.46904 (86092024)
260.0	1.21564 (86032624)	1.19881 (86110924)	1.19710 (86110924)	1.18829 (86110924)	1.17415 (86110924)
270.0	1.75881 (86051524)	1.63838 (86051524)	1.52800 (86051524)	1.42817 (86051524)	1.33458 (86051524)
280.0	1.79732 (86040424)	1.70796 (86040424)	1.61849 (86040424)	1.53173 (86040424)	1.48782 (86052724)
290.0	1.62738 (86062324)	1.56232 (86110824)	1.50046 (86110824)	1.43646 (86110824)	1.37221 (86110824)
300.0	2.69159 (86030924)	2.52163 (86030924)	2.35671 (86030924)	2.20131 (86030924)	2.06239 (86030924)
310.0	2.43589 (86122324)	2.30602 (86122324)	2.17489 (86122324)	2.04663 (86122324)	1.92344 (86122324)
320.0	1.27360 (86031324)	1.19603 (86031324)	1.12336 (86031324)	1.05746 (86031324)	1.00611 (86031324)
330.0	3.06088 (86031324)	2.87307 (86031324)	2.69668 (86031324)	2.53590 (86031324)	2.40250 (86031324)
340.0	1.87187 (86031224)	1.73125c(86102524)	1.67852c(86102524)	1.61844c(86102524)	1.55478c(86102524)
350.0	1.76303 (86113024)	1.72343 (86113024)	1.66917 (86113024)	1.60928 (86113024)	1.54212 (86113024)
360.0	2.30125 (86082024)	2.30068 (86082024)	2.27266 (86082024)	2.22484 (86082024)	2.16356 (86082024)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 , EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** NETWORK ID: POLAR_1 ; NETWORK TYPE: GRIDPOLR ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

DIRECTION (DEGREES)	DISTANCE (METERS) 900.00	950.00	1000.00
10.0	1.69539 (86072324)	1.67435 (86072324)	1.64886 (86072324)
20.0	1.37380 (86072324)	1.34857 (86072324)	1.32257 (86072324)
30.0	1.27643 (86071024)	1.26230 (86071024)	1.24752 (86071024)
40.0	1.09185 (86021024)	1.05399 (86021024)	1.01057 (86021024)
50.0	1.13690 (86122024)	1.11145 (86122024)	1.08595 (86122024)
60.0	1.02779 (86011924)	0.96545 (86011924)	0.95180 (86121824)
70.0	1.26073c(86081824)	1.20599c(86081824)	1.15312c(86081824)
80.0	0.85063 (86021924)	0.80184 (86021924)	0.75649 (86021924)
90.0	1.29894c(86071924)	1.29433c(86071924)	1.28869c(86071924)
100.0	0.86762c(86090624)	0.86521c(86090624)	0.85984c(86090624)
110.0	1.28778 (86042924)	1.22409 (86042924)	1.16889 (86042924)
120.0	1.29420 (86022024)	1.25953 (86011324)	1.22296 (86011324)
130.0	1.30618 (86102624)	1.30909 (86102624)	1.30329 (86102624)
140.0	1.30452 (86122924)	1.25160 (86122924)	1.20560 (86122924)
150.0	1.14748 (86032124)	1.08392 (86032124)	1.01875 (86032124)
160.0	2.35046 (86101624)	2.23715 (86101624)	2.13097 (86101624)
170.0	1.83710 (86120524)	1.72330 (86120524)	1.61344 (86120524)
180.0	2.01284 (86120524)	1.92280 (86120524)	1.83395 (86120524)
190.0	1.26874 (86120624)	1.22380 (86120624)	1.17754 (86120624)
200.0	1.59641 (86102824)	1.56109 (86102824)	1.51827 (86102824)
210.0	1.10809c(86103024)	1.09834c(86103024)	1.07951c(86103024)
220.0	1.78996 (86010824)	1.68673 (86010824)	1.59257 (86010824)
230.0	1.77682 (86010924)	1.69819 (86010924)	1.62005 (86010924)
240.0	1.87361 (86010924)	1.78414 (86010924)	1.72064 (86102924)
250.0	1.43189 (86092024)	1.38981 (86092024)	1.34383 (86092024)
260.0	1.15604 (86110924)	1.13480 (86110924)	1.10997 (86110924)
270.0	1.24940 (86051524)	1.17332 (86051524)	1.10535 (86051524)
280.0	1.47973 (86052724)	1.46447 (86052724)	1.44295 (86052724)
290.0	1.31068 (86110824)	1.25099 (86110824)	1.19413 (86110824)
300.0	1.93605 (86030924)	1.81272 (86030924)	1.69824 (86030924)
310.0	1.80969 (86122324)	1.70641 (86122324)	1.60725 (86122324)
320.0	0.95844 (86031924)	0.92316 (86031924)	0.89369 (86031924)
330.0	2.27682 (86031324)	2.15372 (86031324)	2.03795 (86031324)
340.0	1.49483c(86102524)	1.42755c(86102524)	1.36221c(86102524)
350.0	1.46921 (86113024)	1.40004 (86113024)	1.33517 (86113024)
360.0	2.09467 (86082024)	2.02028 (86082024)	1.94383 (86082024)

*MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 ,
EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF 111_24 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
0.00	0.00	1.99258	(86010824)	15.24	0.00	2.15413	(86010824)
30.48	0.00	2.32675	(86010824)	45.72	0.00	2.40461	(86010824)
60.96	0.00	2.13492	(86010824)	76.20	0.00	1.89972c	(86111324)
91.44	0.00	1.50821c	(86111324)	106.68	0.00	1.67051c	(86111324)
121.92	0.00	1.62659	(86032224)	137.16	0.00	2.59325	(86032224)
152.40	0.00	1.73638	(86011124)	167.64	0.00	1.97834	(86011124)
182.88	0.00	2.87045	(86011124)	198.12	0.00	2.07031	(86011124)
213.36	0.00	1.98018	(86011124)	213.36	15.24	1.61624	(86011124)
213.36	30.48	1.30226c	(86012824)	213.36	45.72	1.20288	(86012724)
213.36	60.96	1.72729	(86012724)	213.36	76.20	1.93817	(86012724)
213.36	91.44	1.58525	(86012724)	213.36	106.68	1.20454	(86012724)
213.36	121.92	1.31849	(86012724)	213.36	137.16	1.26639	(86012724)
213.36	152.40	1.17060	(86012724)	213.36	167.64	1.46416	(86022724)
213.36	182.88	1.55441	(86022724)	213.36	198.12	1.68183	(86022724)
213.36	213.36	1.80576	(86022724)	213.36	220.98	1.91804	(86022724)
198.12	220.98	1.84639	(86022724)	182.88	220.98	1.69818	(86072924)
167.64	220.98	1.73657	(86072924)	152.40	220.98	1.95808c	(86121124)
137.16	220.98	1.43279	(86031924)	121.92	220.98	1.75384	(86031324)
106.68	220.98	2.30715	(86031324)	91.44	220.98	2.72960	(86031324)
76.20	220.98	3.56211	(86031324)	60.96	220.98	3.15382	(86031324)
45.72	220.98	2.77444	(86031324)	30.48	220.98	2.22922	(86031324)
15.24	220.98	1.56888	(86031324)	0.00	220.98	1.89035	(86030924)
0.00	213.36	2.01024	(86030924)	0.00	198.12	2.22631	(86030924)
0.00	182.88	2.30849	(86030924)	0.00	167.64	2.00929	(86030924)
0.00	152.40	1.65843c	(86050524)	0.00	137.16	1.61673c	(86050524)
0.00	121.92	1.36262c	(86050524)	0.00	106.68	0.83043c	(86050524)
0.00	91.44	0.85681	(86101924)	0.00	76.20	0.93862	(86101924)
0.00	60.96	1.02443	(86032524)	0.00	45.72	1.15887	(86010824)
0.00	30.48	1.38170	(86010824)	0.00	15.24	1.64934	(86010824)

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): EXFAN_3 , EXFAN_4 , EXFAN_5 , EXFAN_6 , EXFAN_7 , EXFAN_8 , EXFAN_9 ,
EXFAN_10, EXFAN_11, EXFAN_12, EXFAN_13, EXFAN_14, EXFAN_15, EXFAN_16, EXFAN_17, EXFAN_18, EXFAN_19,

** CONC OF 111_24 IN MICROGRAMS/M**3 **

RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,	YR) OF	TYPE	RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,	YR) OF	TYPE
1.	4.63414	(86031324) AT (	38.28,	298.58)	GP	26.	3.21906	(86011124) AT (	231.68,	-105.87)	GP
2.	4.44094	(86031324) AT (	21.17,	345.56)	GP	27.	3.17728	(86030924) AT (	-326.33,	360.64)	GP
3.	4.25330	(86031324) AT (	-43.32,	370.45)	GP	28.	3.16971	(86030924) AT (	-123.13,	303.48)	GP
4.	4.19527	(86031324) AT (	-68.32,	413.75)	GP	29.	3.15518	(86010824) AT (	-150.44,	-195.78)	GP
5.	4.19113	(86031324) AT (	-18.32,	327.15)	GP	30.	3.15382	(86031324) AT (	60.96,	220.98)	DC
6.	4.14308	(86031324) AT (	55.38,	251.59)	GP	31.	3.14276	(86031324) AT (	31.68,	240.54)	GP
7.	4.05781	(86031324) AT (	-93.32,	457.05)	GP	32.	3.11303	(86030924) AT (	-84.83,	271.34)	GP
8.	4.02814	(86031324) AT (	4.07,	392.55)	GP	33.	3.10600	(86031324) AT (	-30.13,	486.52)	GP
9.	3.87552	(86031324) AT (	6.68,	283.85)	GP	34.	3.09666	(86010824) AT (	-54.02,	-80.87)	GP
10.	3.87541	(86031324) AT (	-118.32,	500.35)	GP	35.	3.09605	(86120524) AT (	176.14,	-283.28)	GP
11.	3.67270	(86031324) AT (	-143.32,	543.65)	GP	36.	3.08585	(86120524) AT (	184.82,	-332.52)	GP
12.	3.59141	(86031324) AT (	80.63,	258.36)	GP	37.	3.07672	(86101624) AT (	277.69,	-359.21)	GP
13.	3.56211	(86031324) AT (	76.20,	220.98)	DC	38.	3.06088	(86031324) AT (	-218.32,	673.56)	GP
14.	3.56078	(86031324) AT (	-13.03,	439.53)	GP	39.	3.06041c	(86121124) AT (	150.09,	356.84)	GP
15.	3.46438	(86031324) AT (	-168.32,	586.95)	GP	40.	3.05711	(86101624) AT (	260.59,	-312.22)	GP
16.	3.42118	(86030924) AT (	-196.43,	285.64)	GP	41.	3.04887	(86101624) AT (	294.79,	-406.19)	GP
17.	3.41055	(86011124) AT (	206.68,	-62.57)	GP	42.	3.03493	(86010824) AT (	-182.57,	-234.08)	GP
18.	3.38749	(86030924) AT (	-239.73,	310.64)	GP	43.	3.03421	(86030924) AT (	-161.44,	335.62)	GP
19.	3.38533	(86030924) AT (	-153.13,	260.64)	GP	44.	3.02708	(86030924) AT (	-369.63,	385.64)	GP
20.	3.36135	(86031324) AT (	71.95,	307.60)	GP	45.	3.02109	(86030924) AT (	-66.53,	210.64)	GP
21.	3.30168	(86030924) AT (	-283.03,	335.64)	GP	46.	3.01228	(86042924) AT (	388.59,	8.03)	GP
22.	3.26184	(86030924) AT (	-109.83,	235.64)	GP	47.	3.00447	(86120524) AT (	193.50,	-381.76)	GP
23.	3.25885	(86031324) AT (	-193.32,	630.26)	GP	48.	3.00235	(86120524) AT (	167.46,	-234.04)	GP
24.	3.22944	(86010824) AT (	-118.30,	-157.48)	GP	49.	2.98821	(86042924) AT (	435.57,	-9.07)	GP
25.	3.22633	(86010824) AT (	-86.16,	-119.17)	GP	50.	2.98752	(86011124) AT (	181.68,	-19.26)	GP

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

```
*** ISCST2 - VERSION 93109 ***    *** Foamex - 125 ft Foam Line & LBSR Stacks (GEP), 53 ft Exhaust Stacks  ***     04/25/95
                                  *** 1,1,1-Trichloroethane 24-hr Average Emissions                         ***     15:38:45
                                                                                                                    PAGE  20
*** MODELING OPTIONS USED:  CONC    RURAL  FLAT         DFAULT

                                         *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

                                  ** CONC OF 111_24    IN MICROGRAMS/M**3                                  **

                                              DATE                                                                  NETWORK
GROUP ID                       AVERAGE CONC    (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS       4.63414  ON 86031324: AT (      38.28,      298.58,       0.00,       0.00)  GP    POLAR_1

*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
                     BD = BOUNDARY
```

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 522 Informational Message(s)

A Total of 522 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

August 22, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Douglas L. Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821

Dear Mr. Terrill:

Attached is a copy of the Technical Evaluation and Preliminary Determination and proposed permit for your existing facility. The proposed permit also includes the proposal to modify the exhaust/dispersion system for your existing flexible polyurethane foam manufacturing facility located in Orlando, Orange County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bruce Mitchell of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/bjb

Attachment

cc: Charles Collins, CD
Dennis Nester, Orange Co.
Joe Tessitore, P.E.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

DEP File No. AC 48-214902
Orange County

Mr. Douglas L. Terrill, Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, Florida 32821
______________________________/

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue an after-the-fact construction permit (copy attached) for the proposed project as detailed in the application specified above for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Foamex, L.P., applied on May 28, 1992, for an after-the-fact air construction permit for an existing flexible polyurethane foam manufacturing facility located at 1351 Gemini Blvd., Orlando, Orange County, Florida 32821. After meeting with the Department to discuss control options and regulatory requirements, the application was revised and resubmitted on July 1, 1994. The revised permit application includes a modification of the existing exhaust/dispersion system. The modification will reduce the ambient air impact of the methylene chloride, trichloroethane, and toluene diisocyanate emissions from the facility.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 17-212 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S., and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S.. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 8/29/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Charlotte J. Hayes 8/26/94
Clerk Date

Copies furnished to:

cc: Charles Collins, CD
Dennis Nester, Orange Co.
Joe Tessitore, P.E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT

The Department of Environmental Protection gives notice of its intent to issue construction permit No. AC 48-214902 to permit the existing facility and to modify the exhaust/dispersion system for Foamex, L.P.'s flexible polyurethane foam manufacturing plant located at 1351 Gemini Blvd., Orlando, Orange County, FL 32821. The plant will emit approximately 1,519 lbs/hr (261 TPY) methylene chloride, 2.5 lbs/hr (1.9 TPY) 1,1,1-trichloroethane, 0.37 lbs/hr (0.13 TPY) toluene diisocyanate, and trace amounts of criteria pollutants from the combustion of natural gas in the boiler and comfort heaters. No criteria pollutant is emitted at a rate that would subject the plant to the Prevention of Significant Deterioration (PSD) regulations and require a Best Available Control Technology determination. The ambient air impact of the emissions from the facility will not exceed the Acceptable Ambient Concentrations.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, (F.S).

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Orange County Environmental Protection Department
2002 East Michigan Avenue
Orlando, Florida 32806

Any person may send written comments on the proposed action to Mr. Bruce Mitchell at the Department of Environmental Protection, Bureau of Air Regulation, Mail Station 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Foamex, L.P.
Orange County
Orlando, Florida

Flexible Polyurethane Foam Manufacturing Plant
File No. AC 48-214902

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

August 22, 1994

I. GENERAL INFORMATION

A. Applicant

Foamex, L.P.
1351 Gemini Blvd.
Orlando, FL 32821

B. Request

On May 28, 1992, Foamex, L.P., submitted an application for an after-the-fact air construction permit for an existing flexible polyurethane foam manufacturing plant (SIC 3021). After meeting with the Department to discuss the control options and regulatory requirements, the application was revised and resubmitted on July 1, 1994, to include an exhaust/dispersion system to reduce the ambient air impact of the methylene chloride, 1,1,1-trichloroethane, and toluene diisocyanate emissions. The existing plant is located at 1351 Gemini Blvd., Orlando, Orange County, FL 32831. The UTM coordinates of this site are Zone 17, 461.0 km E and 3142.9 km N.

C. Process

The six operations at this facility are slabstock polyurethane foam production, rebond polyurethane foam production, foam fabrication, tank storage, steam boiler, and environmental heating.

In the slabstock polyurethane foam production operation, meter pumps transfer raw materials (glue, polyol, water, catalyst, surfactants, additives for color and flame retardent, and methylene chloride for the blowing agent) to a high pressure mixing head. The reacting chemicals are discharged to a trough and then flow down a tunnel area where the heat of reaction evaporates the methylene chloride to produce a polyurethane slab called a bun. The bun is conveyed to the long bun storage room for curing. It is estimated that 60 percent of the methylene chloride used in the process is emitted before the bun reaches the long bun storage room. Another 35 percent of the methylene chloride is discharged while the bun is in the storage room. The remaining 5 percent of the methylene chloride escapes during the foam fabrication operation.

Proposed modifications to the exhaust system for the slabstock polyurethane foam production operation (production and storage) include:

1. Enclose the mixing head, trough, and conveyer line in the tunnel to the long bun storage room.

2. Install exhaust fan(s) with 30,000 acfm exhaust capacity (total) to maintain negative pressure in the new enclosure.

3. Discharge the fumes from the enclosure through a new 2.8 ft. diameter by 125 foot elevation stack.

4. Install 30,000 acfm exhaust fans to maintain negative pressure in the long bun storage room.

5. Discharge the fumes from the long bun storage room through a new 2.8 ft. diameter by 124 ft. elevation stack.

6. Add 3.6 ft. diameter extensions to the existing seventeen 50,000 acfm general exhaust fans located in the remainder of the facility; and, they will all be extended to become 53 ft. above grade.

Maximum allowable usage of methylene chloride by the slabstock polyurethane foam production operation is 513,090 lbs/yr (256.55 TPY), all of which is emitted to the atmosphere. Maximum emissions from the slabstock polyurethane foam production stacks are estimated to be: 1513.35 lbs/hr (243.72 TPY) methylene chloride and 0.37 lbs/hr (0.12 TPY) toluene diisocyanate (TDI). The slabstock polyurethane foam production process operates 3 hrs/day, 4 days/week, and 52 weeks/yr.

In the foam fabrication operation, the buns (slabstock process product) are cut and glued together. The remaining 5 percent of the methylene chloride from the production operation along with small amounts from the glue escape to the atmosphere during this operation. Emissions from this operation are 5.1 lbs/hr (14.41 TPY) methylene chloride, 2.5 lbs/hr (1.9 TPY) 1,1,1-trichloroethane. Emissions are discharged to the atmosphere through 17 rooftop vents. As noted in 6 above, the stack height for the 17 fans will be increased to achieve better dispersion of the air pollutant emissions. The foam fabrication process operates 12 hrs/day, 6 days/week, and 52 weeks/yr.

In the rebond polyurethane foam production operation, scrap foam is ground and transferred to storage bins. It is sent from the bins to a blend tank and mixed with TDI and polyether polyol. The mixture is then compressed in a mold that is heated by steam from the boiler. The product is a cylinder of foam called a log. The log is peeled into a thin sheet and bonded to polyethylene film for packaging into smaller rolls. The capacity of the two exhaust fans serving this section will be increased to 15,000 acfm and the stack height will be increased to 53 ft. elevation. Emissions are estimated to be 0.0046 lbs/hr (0.009 TPY) TDI. The process operates 12 hrs/day, 6 days/week, and 52 weeks/year.

The 11 above ground storage tanks, up to 12 ft. in diameter and 35 ft. high, store polyol, TDI, polymer, and methylene chloride. All tanks are equipped with small vents.

Tank No. 10 contains methylene chloride. The existing methylene chloride vent installed on tank No. 10 is 7 ft. high and

1.25 inches in diameter. A pressure/vacuum relief valve will be installed on the methylene chloride tank (tank No. 10) as part of this project. Primary emissions of concern from the tank storage area are 0.66 lbs/hr (2.9 TPY) methylene chloride. The storage tanks are in service continuously.

The natural gas fired 4.2 MMBtu/hr steam boiler and the thirteen 1.85 MMBtu/hr (total heat input) natural gas fired space heaters at this facility are exempt from permitting pursuant to Rule 17-210.300(3), Florida Administrative Code (F.A.C.).

The boiler and heaters emit the normal products of combustion of natural gas. These emissions are insignificant. The boiler may operate continuously. The space heaters operate approximately 400 hrs/yr.

D. Emissions

The uncontrolled emissions from the six operations at the facility are summarized in Table A (Table 3-8 in the application). Total facility emissions are 1519.14 lbs/hr (261.13 TPY) methylene chloride, 2.5 lbs/hr (1.86 TPY) 1,1,1-trichloroethane, 0.37 lbs/hr (0.13 TPY) TDI, and trace amounts of criteria pollutants from the natural gas fired in the boiler and environmental heating operations.

II. Rule Applicability

The proposed project, modifications to an existing flexible polyurethane foam manufacturing plant (SIC 3021) in Orange County, is subject to the preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 17-4, 17-210, 17-212, 17-272, 17-275, 17-296, and 17-297, F.A.C.

The facility is located in an air quality area designated maintenance for ozone, (Rule 17-275.600, F.A.C.), and attainment for the other criteria pollutants (Rule 17-275.400, F.A.C.).

The facility is a minor source of criteria air pollutants (Rule 17-296.200, F.A.C.). It is a major source of non-criteria organic compounds that cause negligible photochemical reactivity.

The existing facility is not subject to the Prevention of Significant Deterioration regulations (Rule 17-212.400, F.A.C.) because it is a minor source for the criteria air pollutants. It is subject to Rule 17-296.320, F.A.C., General Pollutant Emission Limiting Standards, which require controls for organic solvents as deemed necessary and ordered by the Department.

The facility is subject to Chapter 17-213, F.A.C., Operation Permits for Major Sources of Air Pollution. This rule requires the facility to submit an application for permit to operate by November 15, 1995.

Table A

Table 3.8. Emissions Summary
Foamex, L.P. - Orlando Facility

Contaminant	Emission Source	Emissions[1] Maximum (lbs/hr)	Emissions[1] Actual (T/yr)	Allowed[2] Emission Rate per Rule 17–2	Allowable[3] Emissions (lbs/hr)	Potential[4] Emissions (lbs/hr)	Potential[4] Emissions (T/yr)
Methylene Chloride	Slabstock Process	1513.35	243.72	N/A	N/A	1513.35	243.72
	Tank Storage	0.66	2.9	N/A	N/A	0.69	3
	Foam Fabrication	5.1	14.41	N/A	N/A	5.1	14.41
	Subtotal	1519.11	261.03	N/A	N/A	1519.14	261.13
1,1,1 Trichloroethane	Foam Fabrication	2.5	1.86	N/A	N/A	2.5	1.86
	Subtotal	2.5	1.86	N/A	N/A	2.5	1.86
Toluene Diisocyanate	Slabstock Process	0.37	0.12	N/A	N/A	0.37	0.12
	Rebond Process	0.0046	0.009	N/A	N/A	0.0046	0.009
	Subtotal	0.3746	0.129	N/A	N/A	0.3746	0.129
Particulate	Steam Boiler	0.021	0.092	N/A	N/A	0.021	0.092
	Environmental Heating	0.00925	0.00185	N/A	N/A	0.00925	0.00185
	Subtotal	0.03025	0.09385	N/A	N/A	0.03025	0.09385
Sulfur Dioxide	Steam Boiler	0.0025	0.011	N/A	N/A	0.0025	0.011
	Environmental Heating	0.00111	0.000222	N/A	N/A	0.00111	0.000222
	Subtotal	0.00361	0.011222	N/A	N/A	0.00361	0.011222
Nitrogen Oxides	Steam Boiler	0.59	2.58	N/A	N/A	0.59	2.58
	Environmental Heating	0.259	0.0518	N/A	N/A	0.259	0.0518
	Subtotal	0.849	2.6318	N/A	N/A	0.849	2.6318
Carbon Monoxide	Steam Boiler	0.147	0.64	N/A	N/A	0.147	0.64
	Environmental Heating	0.06475	0.01295	N/A	N/A	0.06475	0.01295
	Subtotal	0.21175	0.65295	N/A	N/A	0.21175	0.65295
Total Hydrocarbons	Steam Boiler	0.013	0.055	N/A	N/A	0.013	0.055
	Environmental Heating	0.00555	0.00111	N/A	N/A	0.00555	0.00111
	Subtotal	0.01855	0.05611	N/A	N/A	0.01855	0.05611

1. See Section V, Item 2 (Application Section 3.2)
2. Reference applicable emission standards and units (e.g. Rule 17–2.600(5)(b)2. Table II, E. (1) – 0.1 pounds per million BTU heat input)
3. Calculated from operating rate and applicable standard.
4. Emission, if source operated without control (See Section V, Item 3).

III. Technical Evaluation

The existing facility is an uncontrolled source of photochemically nonreactive organic solvents. The application is for the after-the-fact permitting of the existing facility and the alteration of the existing exhaust system to improve the capture and dispersal of the air pollutants. The altered duct system will result in better capture and dispersion of the chemicals used in the process. The emissions of the chemicals used at this plant can be reduced by major changes to the process and/or the addition of air pollution control equipment. The applicant is not proposing a reduction of air pollutant emissions as part of this application. The applicant is committed to submitting periodic reports on the control of air pollutants from this process until a maximum achievable control technology (MACT) standard for this industry group is issued by EPA or the Department. The system or equipment to reduce air pollution to meet the MACT will then be installed on a schedule approved by the Department.

IV. Air Quality

The applicant modeled the emissions of methylene chloride, 1,1,1-trichloroethane, and TDI to determine the predicted off-property ambient air impacts. The EPA and Department-approved Industrial Source Complex - Short Term (ISCST2) model was run with one year of meteorological data (1986 Orlando surface and 1986 Tampa upper air). Downwash parameters generated by EPA's Building Profile Input Program were input into the ISCST2 model. A polar receptor grid with the origin at the center of the Foamex facility property was used. This grid consists of eighteen rings, one every 50 meters, starting at 150 meters from the origin and extending out to 1000 meters. Each ring consists of 36 radials, one every 10°, for a total of 648 receptors. An additional 58 discrete receptors placed along the property boundaries were used. The modeling results are given below and show that maximum predicted off-property concentrations for each pollutant are less than the applicable Acceptable Ambient Concentrations:

Pollutant	Maximum Predicted Concentration (ug/m^3)			Acceptable Ambient Concentration (ug/m^3)		
	8-hr	24-hr	Annual	8-hr	24-hr	Annual
Methylene Chloride	517.4	84.9	1.9	1740	417.6	2.1
1,1,1-Trichloroethane	7.5	2.3	---	38,200	9,168	---
Toluene Diisocyanate	0.15	0.02	---	0.36	0.0864	---

V. Conclusion

Based on the information provided by Foamex, L.P., the Department has reasonable assurance that the proposed construction of the exhaust/dispersion system at this existing flexible polyurethane foam manufacturing plant, as described in this evaluation, and subject to the conditions proposed herein, will not cause a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-212 of the Florida Administrative Code.

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

PERMITTEE:
Foamex, L.P.
1351 Gemini Blvd.
Orlando, Florida 32821

Permit Number: AC48-214902
Expiration Date: January 15, 1996
County: Orange
Latitude/Longitude: 28°24'15"N 81°23'40"W
Project: Flexible Polyurethane Foam Manufacturing Plant

This after-the-fact permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 17-212 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto and specifically described as follows:

Modification to the exhaust/dispersion system at an existing flexible polyurethane foam manufacturing facility located at 1351 Gemini Blvd., Orlando, Orange County, Florida 32821. The six operations at this facility are an 18.1 TPH slabstock polyurethane foam production unit, an 18.1 TPH foam fabrication operation, a 3.1 TPH rebond polyurethane foam production unit, 11 above ground storage tanks, a 4.2 MMBtu/hr natural gas fired boiler, and a total 1.85 MMBtu/hr natural gas fired environmental space heating system.

The modified facility will have: a foam line stack that is 125 ft. high and 2.8 ft. in diameter and handling 30,000 acfm of air; a long bun storage room stack that is 125 ft. high and 2.8 ft. in diameter and handling 30,000 acfm of air; seventeen 50,000 acfm exhaust fans venting through 3.6 ft. diameter stacks with an elevation of 53 feet; and, two 15,000 acfm exhaust fans venting through 2 ft. diameter stacks with an elevation of 53 feet. The methylene chloride storage tank (No. 10) will be equipped with a pressure/vacuum relief valve.

The 4.2 MMBtu/hr natural gas fired boiler and 13 indirect natural gas fired heaters (1.85 MMBtu/hr total heat input) at this facility are exempt from air permitting.

The UTM coordinates of this facility are Zone 17, 461.0 km E and 3142.9 km N.

The proposed project shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

<u>Attachments are listed below</u>:

1. Application received July 1, 1994.
2. Harding Lawson Associates letter dated August 3, 1994.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. A description of and cause of non-compliance; and,

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

GENERAL CONDITIONS:

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 17-4.120 and 17-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- ( ) Determination of Best Available Control Technology (BACT)
- ( ) Determination of Prevention of Significant Deterioration (PSD)
- ( ) Compliance with New Source Performance Standards (NSPS)

14. The permittee shall comply with the following:

   a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

   b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The enhanced exhaust systems shall be completed by September 1, 1995. The systems shall include: two 2.8 ft. diameter by 125 ft. high stacks, each handling 30,000 acfm of air; seventeen roof exhaust fans with 3.6 ft. diameter 53 ft. high stacks, each handling 50,000 acfm of air; and, two roof exhaust fans with 2 ft. diameter by 53 ft. high stacks, each handling 15,000 acfm of air. The two 125 ft. high stacks shall be equipped with stack sampling facilities meeting the specifications listed in Rule 17-297.345, F.A.C. Tank No. 10 shall be equipped with a pressure/vacuum relief valve.

2. The chemicals used at this facility shall not exceed the following quantities during any 12 month period: 513,090 lbs/yr (256.6 TPY) methylene chloride; 270,000 lbs/yr (135 TPY) polymer; 8,800,000 lbs/yr (4,400 TPY) polyol; and, 4,650,000 lbs/yr (2,325 TPY) toluene diisocyanate. Cleanup solvent losses shall not exceed: 2 gallons/month isopropyl alcohol; 5,770 lbs/yr 1,1,1-trichloroethane with silicone lubricant; and, 97.5 lbs/yr mineral spirits.

Compliance with this condition shall be determined by records of purchases, inventory changes, and receipts for chemicals disposed of off site. The permittee shall maintain a log showing the amount of chemicals used each month to document compliance with these limitations.

SPECIFIC CONDITIONS:

3. Maximum operation times for each operation at this facility are:

Operation	hrs/day	days/week	weeks/year	hrs/year
Slabstock Process	3	4	52	624
Rebond Process	12	6	52	3744
Foam Fabrication Operations	12	6	52	3744
Tank Storage	24	7	52	8760
Steam Boiler	24	7	52	8760
Environmental Heating				400

The permittee shall maintain a log to show compliance with this condition. The log shall be kept for a minimum of 5 years and made available for Department inspection upon request.

4. For inventory purposes, the estimated emissions from this facility (based on the emissions factors listed in the application, the limitations on operation time, and chemical usage) are:

AVERAGE EMISSIONS FROM SIX OPERATIONS:

	lbs/hr	TPY
methylene chloride	1519.11	261.03
1,1,1-trichloroethane	2.5	1.86
toluene diisocyanate	0.3746	0.129

PERMITTEE:
Foamex, L.P.

Permit Number: AC48-214902
Expiration Date: January 15, 1996

SPECIFIC CONDITIONS:

MAXIMUM POTENTIAL EMISSIONS FROM INDIVIDUAL OPERATIONS ARE ESTIMATED TO BE:

Operation/chemical	Emissions lbs/hr	Emissions TPY
I. Slabstock Polyurethane Foam Production		
a) toluene diisocyanate	0.37	0.12
b) Foam Line Stack		
methylene chloride	955.8	153.93
c) Long Bun Storage Room Stack		
methylene chloride	577.55	89.79
II. Foam Fabric Operations		
methylene chloride	5.1	14.41
1,1,1-trichloroethane	2.5	1.86
III. Rebond Polyurethane Foam Production		
toluene diisocyanate	0.0046	0.009
IV. Tank Storage (Tank No. 10)		
methylene chloride	0.66	2.92
V. Steam Boiler	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	
VI. Environmental Heating	Trace amounts of the normal products of combustion (less than 1 lb/hr of all pollutants)	

SPECIFIC CONDITIONS:

5. To confirm the emission factors used in the application, the permittee shall measure the emissions from both slabstock process stacks for methylene chloride by EPA Method 18, as described in 40 CFR 60, Appendix A. If the measured emission factors are significantly different from the ones used in the application, the applicant shall remodel the emissions from the facility using the emission factors established by the stack test to confirm that the Acceptable Ambient Concentration for methylene chloride is not exceeded. Testing of emissions shall be conducted with the source operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. If it is impracticable to test at permitted capacity, then sources may be tested at less than capacity (i.e. less than 90% of the maximum operating rate allowed by this permit); in this case, subsequent source operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. (Rule 17-4.070, F.A.C.)

6. Progress reports on the replacement of the process and/or the installation of air pollution control equipment to meet MACT requirements shall be submitted to the Orange County Environmental Protection Department and the Department's Central District and Bureau of Air Regulation on or before the dates noted below.

First Progress Report	Due by January 31, 1995
Second Progress Report	Due by June 30, 1995
Third Progress Report	Due by January 31, 1996

7. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (Rule 17-4.090, F.A.C.).

8. An application for an operation permit shall be submitted to the Department's Central District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the

SPECIFIC CONDITIONS:

appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (Rules 17-4.055 and 17-4.220, F.A.C.).

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Howard L. Rhodes, Director
Division of Air Resources
Management

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Douglas L. Terrill
Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, FL 32821

4a. Article Number
Z 751 859 974

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 8-31-94

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent) Doris Caicedo

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Z 751 859 974

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Mr. Douglas L. Terrill	
Street and No. Foamex L.P. 1351 Gemini Boulevard	
P.O., State and ZIP Code Orlando, FL 32821	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 8-26-94 Permit: AC48-214902	

PS Form **3800**, March 1993

SHOLTES & KOOGLER

Check Sheet

Company Name: FOAMEX, L.P.
Permit Number: 0950225-003-AC
PSD Number: PSD-189
Permit Engineer: HANKS

Application:

- [x] Initial Application
  - [x] Incompleteness Letters
  - [ ] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [ ] Other

Cross References:

- [ ]
- [ ]
- [ ]

Intent:

- [x] Intent to Issue
- [x] Notice of Intent to Issue
- [ ] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit

Correspondence with:

- [ ] EPA
- [ ] Park Services
- [ ] Other

- [x] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [ ] Other

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [ ] BACT Determination
- [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [ ] Other

Check Sheet

Company Name: FOAMEX, L.P.
Permit Number: 0950225-002-AC
PSD Number: PSD-189
Permit Engineer: HANKS

Application:

- [x] Initial Application
  - [x] Incompleteness Letters
  - [x] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [ ] Other

Cross References:

- [ ]
- [ ]
- [ ]

Intent:

- [x] Intent to Issue
- [x] Notice of Intent to Issue
- [ ] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
- Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] Other
- [x] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [ ] Other

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [ ] BACT Determination
  - [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [ ] Other

Check Sheet

Company Name: FOAMEX, L.P.
Permit Number: (AC48-214902) 0950225-001-AC
PSD Number: PSD-189
Permit Engineer: C. HOLLADAY

Application:

- [x] Initial Application
  - [ ] Incompleteness Letters
  - [ ] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [ ] Other

Cross References:

- [ ]
- [ ]
- [ ]

Intent:

- [x] Intent to Issue
- [x] Notice of Intent to Issue
- [ ] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
  - Correspondence with:
    - [ ] EPA
    - [ ] Park Services
    - [ ] Other
- [x] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [ ] Other

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [ ] BACT Determination
  - [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [ ] Other

The Orlando Sentinel

Published Daily
$218.09

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared SHERI L. MILLER, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a INTENT TO ISSUE ST in the matter of AC 48-214902A

in the ORANGE Court, was published in said newspaper in the issue; of 05/21/96

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Sheri L. Miller

The foregoing instrument was acknowledged before me this 23 day of MAY, 1996, by SHERI L. MILLER, who is personally known to me and who did take an oath.

Juanita Rosado

(SEAL) NOTARY PUBLIC STATE OF FLORIDA

JUANITA ROSADO
My Comm Exp. 7/13/98
Bonded By Service Ins
No. CC392006
[ ] Personally Known [ ] Other I.D.

INTENT TO ISSUE
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT
AC 48-214902A

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit to Foamex L.P., 1351 Gemini Blvd., Orlando, Orange County, Florida 32821. The modifications are to reconfigure the foam fabrication operation to reduce the number of fans needed to ventilate this process, to allow a 19.1 tons per year increase in methylene chloride emissions, and to extend the expiration date of the existing construction permit to May 15, 1997. These modifications do not require a Best Available Control (BACT) determination. Air dispersion modeling shows that ground-level concentrations of methylene chloride will not exceed the Florida Administration Reference Concentration.

The department has assigned File Number 175533 to the project.

A person whose substantial interests are affected by the department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Blvd., MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207 Florida Administrative Code.

The application/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
3319 Maguire Boulevard, Suite 232,
Orlando, Florida 32803-3767

Orange County Environmental Protection Department
2002 East Michigan Street
Orlando, Florida 32806

Any person may send written comments on the proposed action to the Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

COR949019 MAY.21,1996

Z 751 859 974

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Mr. Douglas L. Terrill	
Street and No. Foamex L.P. 1351 Gemini Boulevard	
P.O., State and ZIP Code Orlando, FL 32821	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 8-26-94 Permit: AC48-214902	

PS Form **3800**, March 1993

SHOLTES & KOOGLER

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Douglas L. Terrill
Plant Manager
Foamex, L.P.
1351 Gemini Boulevard
Orlando, FL 32821

4a. Article Number
Z 751 859 974

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
8-31-94

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Doug Caicedo

PS Form **3811**, December 1991 ★U S GPO 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

BEST AVAILABLE COPY

UNITED STATES POSTAL SERVICE

Official Business

RECEIVED

SEP 6 1994

Bureau of
Air Regulation

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

Patty Adams MS 5505
Bureau of Air Rkgulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Z 127 632 544

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Douglas Terrill	
Street and No. Foamex, LP	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Pmt. Mod. AC 48-214902	10-16-95

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas Terrill, P. Mgr
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32821 37

4a. Article Number
Z 127 632 544

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
10-23-95

5. Signature (Addressee)
M Barber

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ★U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

BEST AVAILABLE COPY

UNITED STATES POSTAL SERVICE

Official Business

RECEIVED

1995

BUREAU OF
AIR REGULATION

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

The Orlando Sentinel

Published Daily

$207.80

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared JUANITA ROSADO, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a STATE OF FLORIDA in the matter of AC48-214902

in the ORANGE Court, was published in said newspaper in the issue; of 10/29/95

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Juanita Rosado

The foregoing instrument was acknowledged before me this 30 day of OCTOBER, 19 95, by JUANITA ROSADO, who is personally known to me and who did take an oath.

Beverly C. Simmons

(SEAL)

NOTARY PUBLIC STATE OF FLORIDA

BEVERLY C. SIMMONS
My Comm Exp. 3/10/97
Bonded By Service Ins
No. CC263839

[ ] Personally Known [ ] Other I.D.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT
AC48-214902

The Department of Environmental Protection gives notice of its intent to issue a modification for construction permit No. AC48-214902 to Foamex, L.P., for their polyurethane foam manufacturing facility located in Orlando, Orange County, Florida. The modification will increase the allowable operating hours and result in an increase of volatile organic compounds (VOC) of approximately one ton per year.

The modification is not subject to the Prevention of Significant Deterioration (PSD) regulation which would otherwise require a Best Available Control Technology (BACT) determination. The modification will not cause or contribute to a violation of any state or federal ambient air quality standards.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) pursuant to Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207 Florida Administrative Code.

The applicant/request is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301

Department of Environmental Protection
Central District
3319 Maguire Boulevard
Orlando, Florida 32308-3767

Orange County Environmental Protection Department
2002 E. Michigan Avenue
Orlando, Florida 32806

Any person may send written comments on the proposed action to Administrator, New Source Review Section, at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

COR617551 OCT.29,1995

Z 127 633 147

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Douglas Terrell	
Street and No. Taanex	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 1-16-96 AC48-214902	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas Terrell, Plant Mgr
Taanex, LP
1351 Gemini Blvd
Orlando, Fl 32821

4a. Article Number
Z 127 633 147

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
1-18-96

5. Signature (Addressee)

6. Signature (Agent)
M Barber 1/18/96

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆U S GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

BEST AVAILABLE COPY

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S. MAIL

RECEIVED

JAN 22 [illegible]

BUREAU OF AIR REGULATION

Print your name, address and ZIP Code here

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

Z 127 633 205

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Douglas Terrell	
Street and No. Foamex, LP	
P.O., State and ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 5-3-96 AC48-214902A	

PS Form 3800, March 1993

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrell
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
Z 127 633 205

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of ~~Delivery~~ 5-7-96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent) M Barber

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 339 251 114

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Douglas Terrill	
Street & Number Farmer, LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 6-21-96 AC 48-214902A	

PS Form **3800**, April 1995

Is your **RETURN ADDRESS** completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrill, P.M.
Farmer, LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
P 339 251 114

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
6/24 DM

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
M. Barber

PS Form **3811**, December 1991 ★U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S. MAIL

RECEIVED

JUN 28 1996

BUREAU OF AIR REGULATION

Print your name, address and ZIP Code here

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

P 339 251 118

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

PS Form **3800**, April 1995

Sent to John Walber	
Street & Number Foamex, LP	
Post Office, State, & ZIP Code Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	6-27-96

Fold at line over top of envelope to

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
John Walber, P.S.
Foamex, LP
4763 S. Conway Rd
Orlando, Fl 32812

4a. Article Number
P 339 251 118

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

5. Signature (Addressee)

6. Signature (Agent)

7. Date of Delivery
Foley 7/1/96

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S. MAIL

RECEIVED

JUL 5 1996

BUREAU OF AIR REGULATION

Print your name, address and ZIP Code here

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation, NSRS
2600 Blair Stone Road, MS 5505
Tallahassee, Florida 32399-2400

BEST AVAILABLE COPY

P 339 251 131

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to: Doug Terrill	
Street & Number: Foamex LP	
Post Office, State, & ZIP Code: Orlando, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: AC48-2149023 7-31-96 0950225-003-AC	

PS Form **3800**, April 1995

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Douglas L. Terrill
Foamex, LP
1351 Gemini Blvd
Orlando, Fl 32821

4a. Article Number
P 339 251 131

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
8-2-96

5. Signature (Addressee)
Antonello Tole

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

.CEIPT

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S. MAIL

RECEIVED
AUG 7 1996
BUREAU OF AIR REGULATION

Print your name, address and ZIP Code here

Department of Environmental Protection
Mail Station 5505 -- NSRS
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

BEST AVAILABLE COPY

The Orlando Sentinel

Published Daily
$213.68

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared BEVERLY C. SIMMONS, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF in the matter of DRAFT PERMIT NO. AC 48-214902B in the ORANGE Court, was published in said newspaper in the issue; of 08/10/96

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Beverly C. Simmons

The foregoing instrument was acknowledged before me this 22 day of August, 19 96, by BEVERLY C. SIMMONS, who is personally known to me and who did take an oath.

Sheri L. Miller

(SEAL)

SHERI L. MILLER
My Comm Exp. 5/01/00
Bonded By Service Ins
No. CC562241

NOTARY PUBLIC STATE OF FLORIDA

[ ] Personally Known [ ] Other I.D.

PUBLIC NOTICE
OF INTENT TO ISSUE
AIR CONSTRUCTION
PERMIT MODIFICATION
STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION

DRAFT Permit No. AC 48-214902B (0950225-003-AC)
Foamex L.P. Flexible Polyurethane Foam Manufacturing Plant
Orange County

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification to the air construction permit for Foamex L.P., 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821. The modification will allow methylene chloride emissions at the facility to increase from 280 to 365 tons per year (TPY) for up to 5 years. After period, the methylene chlo ride emissions cannot exceed@$ 180 TPY or the applicable Maxi @issuance action for a period of 14 (fourteen) days from the date of publication of the Notice. Written comments should ba provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received results in a significant change in the DRAFT Permit Modification, the Department will issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be differant from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have tha right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

The complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
FAX: 904/922-6979
COR1084952 AUG.10,1996

BEST AVAILABLE COPY

The Orlando Sentinel

Published Daily
$213.68

State of Florida } S.S.
COUNTY OF ORANGE

Before the undersigned authority personally appeared BEVERLY C. SIMMONS, who on oath says that he/she is the Legal Advertising Representative of The Orlando Sentinel, a daily newspaper published at ORLANDO in ORANGE County, Florida; that the attached copy of advertisement, being a PUBLIC NOTICE OF in the matter of DRAFT PERMIT NO. AC 48-214902B in the ORANGE Court, was published in said newspaper in the issue; of 08/10/96

Affiant further says that the said Orlando Sentinel is a newspaper published at ORLANDO, in said ORANGE County, Florida, and that the said newspaper has heretofore been continuously published in said ORANGE County, Florida, each Week Day and has been entered as second-class mail matter at the post office in ORLANDO in said ORANGE County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Beverly C. Simmons

The foregoing instrument was acknowledged before me this 22 day of August, 19 96, by BEVERLY C. SIMMONS, who is personally known to me and who did take an oath.

Sheri L. Miller

(SEAL)

SHERI L. MILLER
My Comm Exp. 5/01/00
Bonded By Service Ins
No. CC562241
[ ] Personally Known [ ] Other I.D.

NOTARY PUBLIC STATE OF FLORIDA

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit No. AC 48-214902B (0950225-003-AC)
Foamex L.P. Flexible Polyurethane Foam Manufacturing Plant
Orange County

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification to the air construction permit for Foamex L.P., 1351 Gemini Boulevard, Orlando, Orange County, Florida 32821. The modification will allow methylene chloride emissions at the facility to increase from 280 to 365 tons per year (TPY) for up to 5 years. After period, the methylene chlo ride emissions cannot exceed@$ 180 TPY or the applicable Maxi @issuance action for a period of 14 (fourteen) days from the date of publication of the Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received results in a significant change in the DRAFT Permit Modification, the Department will issue a Revised DRAFT Permit Modification and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The petition shall contain the following information; (a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

The complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday except legal holidays, at:
Department of Environmantal Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 904/488-1344
FAX: 904/922-6979
COR1084952 AUG.10,1996

P 339 251 149

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Rafael Rodriguez	
Street & Number Foanex LP	
Post Office, State, & ZIP Code Orlando Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 9-6-96 AC48-2149023 0950225-003-AC	

PS Form **3800**, April 1995

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- *Complete items 3, and 4a & b.*
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Rafael Rodriguez
Foanex, LP
1351 Gemini Blvd
Orlando, Fl 32837

4a. Article Number
P 339 251 149

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
9-9-96

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)
Antoinette [illegible]

PS Form **3811**, December 1991 ★U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE

Official Business

RECEIVED
SEP 12 1996
BUREAU OF
AIR REGULATION

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

Department of Environmental Protection
Mail Station 5505 -- NSRS
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400