Date: 9/1/98 5:52:26 PM
From: Robert Soich TPA
Subject: FPC Anclote Plant Gas Conversion.
To: Clair Fancy TAL
CC: Bill Thomas TPA
CC: Gerald Kissel TPA
CC: Bill Proses TPA
CC: Alvaro Linero TAL

In late December of 1994 and throughout 1995 it came to the districts attention that oily soot fallout from the Anclote plant was impacting residents within a one half mile radius of the plant.
Samples were collected from complainants property and indicated that fallout was from the power plant. The district met with Florida Power officials and a decision was made to install air tempering coils. The plant operation showed improvement after the installation. Large oily soot fallout no longer regularly occurred.

Since that time plume visibility has become more of a problem. A dense tan white condensed plume appears during early morning hours when associated with a load change. Stack monitors and compliance tests show compliance with the regulations. The public is concerned when viewing the dense plume. While idling at low loads the facility may still be condensing smaller size oily soot particles and that, along with condensing particles out side of the stack, may be causing the plume visibility problem. During the afternoon plume visibility does not appear to be a problem and visible emissions seem to correspond to opacity monitor readings.

With the construction of the FPC Hines Energy Complex in Polk County, this ensures that the current operation of idling the Anclote Plant will remain. The use of natural gas at low load, such as during idle, could only improve the condensable problem. When cofiring with gas at higher loads this also would help the plume visibility problem.

The alternative is that FPC keeps their current permit conditions without installing natural gas. Fuel oil up to 2.5% sulfur could be burned. Gas would certainly burn cleaner than #6 oil and this benefit will be available up to 40% of load on each unit. The need to blow soot wood become less frequent.

It's my opinion that gas conversion can only improve the situation concerning plume visibility and associated fallout from this facility.

Florida Power
CORPORATION

September 1, 1998

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

Dear Mr. Fancy:

Re: FPC's Anclote Plant Natural Gas Co-Firing Project
Pollution Control Project Exemption

On February 19, 1998, Florida Power Corporation (FPC) applied for a Permit to Construct in order to install natural gas co-firing capability at the above-referenced site. FPC categorized this as a pollution control project, as defined under 40 CFR 51.21(b)(2)(iii)(h), and therefore excluded from new source review. FPC maintained that the definition appropriately applied because: 1) the use of natural gas at low loads will lessen the potential for acid smut formation, resulting in lower opacity and reduced soot deposition and 2) the reduction in future SO_2 emissions resulting from the burning of gas is significant to FPC's acid rain compliance strategy.

In accordance with the definition of a pollution control project (PCP) at 40 CFR 52.21(b)(32), F.A.C., FPC attests to the fact that the Anclote natural gas co-firing project is an activity undertaken to accommodate switching to a fuel which is less polluting than the fuel in use prior to the addition of gas. FPC also attests that the primary purpose of the Anclote gas co-firing project is the reduction of air pollutants. Specifically, the natural gas project itself will not result in any significant capacity factor increase, the collateral increase in PSD pollutants, if any, would be small and the decrease in one or more PSD pollutants will be substantial.

In support of the above statement, FPC has agreed to accept a lower fuel sulfur limit and to commit to the use of co-fired natural gas at low load operation. Specifically, FPC will accept an annual average fuel sulfur limit of 1.5 percent (including a 24 hour as-fired average of 1.8 percent), versus the current allowable 2.5 percent sulfur limit. Further, FPC acknowledges a commitment to purchase approximately 7,000 MMBtu/day of firm gas transportation at the Anclote site in order for the gas pipeline project to be feasible. This commitment reflects an intended use of co-fired natural gas at low loads to address the acid smut problem. FPC commits to burn firm natural gas during periods of low load (i.e., less than 80 MWs per unit) operation.

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P.O. Box 14042, BB1A • St. Petersburg • Florida 33733-4042 • (727) 866-5151
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If you should have any questions concerning the above, please do not hesitate to contact either Scott Osbourn at (727) 826-4258 or me at (727) 826-4301.

Sincerely,

W. Jeffrey Pardue, C.E.P.
Director, Environmental Services Department
FPC Responsible Official

Florida Department of

Memorandum **Environmental Protection**

TO: Howard L. Rhodes, Director
Division of Air Resources Management

FROM: Clair H. Fancy, Chief
Bureau of Air Regulation

DATE: September 1, 1998

SUBJECT: Florida Power Corporation

On Friday, August 29, I spent most of the day with Scott Osbourn of FPC. We worked out conditions in the draft Title V permit regarding annual hourly limits for 4 combustion turbines for the DeBary facility. The revised draft permit will be issued in about two weeks.

Much of the time was spent on the partial natural gas conversion project proposed for Anclote. On July 22 we issued an Intent for the conversion on the basis that actual emissions of PM, SO_2 and NO_x would not increase after the conversion, thus keeping them from going through Prevention of Significant Deterioration (PSD) review and a BACT review. The company objected to the permit as they had hoped it could be issued as a Pollution Control Project (PCP) and would escape restrictions and be exempt from PSD review. They are currently allowed, by permit and by rule, to operate each 500 MW Unit 8760 hours per year burning up to 2.5% sulfur fuel. They have recently burned fuel in the 1-1.5% sulfur range with a capacity factor of 33-44%.

As gas is a much cleaner fuel than oil and they have had acid smut problems at the plant when it operates at low loads (less than 80 MW), I decided we should discuss again the possibility of this being a PCP.

The company has agreed to taking a sulfur limit of 1.8% 24 hour and 1.5% rolling 12 month average, which is a reduction of 28-40% of what they are currently allowed. The effective SO_2 emission will actually be less than that because they will burn a minimum of 4% gas and a maximum of 40% gas, depending on price and availability. They will have 43 MW of firm gas that they must take to get the pipeline built to the Anclote plant.

A main reason for using the gas at low loads is that it will reduce the acid smut problem. At low loads, typically at night, material builds up in the boiler. Then in the morning when the load goes up, the material goes out the stack and ends up being deposited on cars, boats, and houses. FPC says they spend about $40,000 per year washing cars, boats and houses, not to mention the public relations problems that they have. The district air compliance engineer is very much in favor of the partial gas conversion. There will be a permit condition requiring the firing of at least 43 MW of gas while the units operate at low load. This is part of the justification for this being a PCP, along with gas being an inherently cleaner fuel.

The company has prepared a signed statement that the main reason for this conversion is pollution control and that this project will not cause the units to be run more - i.e., a capacity factor increase. These are two requirements of a PCP.

By taking this approach, we are using common sense regulation to produce a positive environmental result.

CHF/h

TO: Clair Fancy

FROM: A. A. Linero 9/1

DATE: September 1, 1998

SUBJ: Anclote Natural Gas Usage

The original application was to modify Anclote 1 and 2 to accommodate natural gas. Because of the present low availability of the unit, use of natural gas could increase the use of the unit, resulting in a PSD-significant increase in NOx emissions. Although the company has used 1-1.5% sulfur fuel oil in recent years, correspondence from them indicated that the burners were being designed to actually co-fire the gas with 2.5% sulfur fuel oil and maintain the flexibility of using even higher sulfur fuel oil.

With these facts, the project would clearly trigger PSD and the Pollution Control Project exemption in our rules (which they did not request in their application) in our rules would not apply. Initially we included language to simply limit future emissions to past actual emissions plus a margin for system-wide capacity utilization. This is not acceptable to FPC, therefore we reached an impasse.

The PCP rule states that the purpose of co-firing must be to reduce emissions. According to the attached press release, the primary purpose appears to be economic.

We requested any internal documents from FPC in support of the environmental priority of the project. A similar request to TECO resulted in very substantial documentation regarding the coalyard project.

Since we met with FPC on Friday, they have agreed to stipulate through their responsible official that the primary purpose is environmental. They have now agreed to limit fuel oil sulfur to less than 1.8% sulfur. With these additional facts and recognition of the acid smut fallout problem in the area, we can consider the natural gas co-firing to be a PCP. Without this additional substantiation, we could not.

AAL/kt

Florida Power
CORPORATION

Environmental Services Department

FAX COVER SHEET

DATE: 9/1/98

TO: Clair Fancy FAX # (850) 922-6979

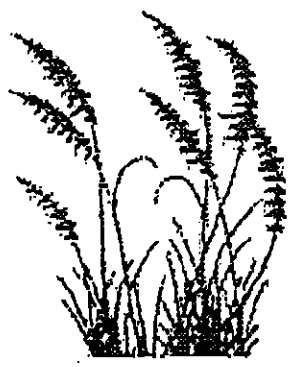
COMPANY: DEP

FROM: Scott Osborn PHONE # (727) 826-4258

FAX #

NUMBER OF PAGES TRANSMITTED 4

Please call number listed above for any transmission problems.



COMMENTS:

As we discussed.

Florida Power
CORPORATION

August 31, 1998

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

Dear Mr. Fancy:

Re: FPC's Anclote Plant Natural Gas Co-Firing Project
Pollution Control Project Exemption

This letter serves to provide the additional information requested during our telephone conversation of August 31, 1998. Specifically, you had requested that Florida Power Corporation (FPC) submit data for the Anclote Plant relating to annual average fuel oil sulfur levels and annual capacity factors for the years 1993 through 1997. The data summarized below was obtained from the Annual Operating Reports for the years requested.

Annual average fuel sulfur levels are as follows: 1993 - 1.56%; 1994 - 1.34%; 1995 - 1.49%; 1996 - 1.36%; 1997 - 1.08%. Although the allowable fuel oil sulfur level at Anclote Plant is 2.5%, FPC has historically burned fuel oils with a sulfur content of 2.0% or less. Recently, the fuel oil sulfur levels have been much lower in order that FPC could qualify for SO_2 bonus allowances under EPA's Acid Rain program (see attached letter). The levels for 1996 and 1997 were lower than normal because there was uncertainty regarding which year EPA would use as the baseline for determining eligibility. Now that FPC has qualified for the allowances, there is no continuing requirement.

Annual capacity factor is determined by dividing total heat input (or fuel use) for each year by the total potential heat input or fuel use, assuming the units could operate at full load for 8,760 hours per year. The figures are as follows: 1993 - 40%; 1994 - 33%; 1995 - 33%; 1996 - 39%; 1997 - 44%.

If you should have any questions concerning the above, please do not hesitate to contact me at (727) 826-4258.

Sincerely,

Scott H. Osbourn
Senior Environmental Engineer

Attachment

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

AUG 13 1998

Mr. W. Jeffrey Pardue
Florida Power Corporation
P.O. Box 14042
MAC H2G
St. Petersburg, FL 33733

Re: Determination of Eligibility under §73.19 For Anclote Units 1 & 2

Dear Mr. Pardue:

EPA's review of data in the National Allowance Data Base (NADB) and Supplemental Data File (SDF) confirms that Anclote units 1 and 2 meet the requirements for eligibility both under existing §73.19(a) and under the revised §73.19(a) that EPA intends to promulgate as a final rule in the 1998 allocation revision rulemaking. Under either version of §73.19(a) a unit's 1997 SO_2 emission rate can be used to determine eligibility.

To determine 1997 SO_2 emission rate, EPA used quality assured data submitted in accordance with 40 CFR Part 75. For Anclote 1, continuous emissions monitoring showed a heat input of 21,786,765 mmBtu and emissions of 11,695 tons of SO_2. The calculated emission rate was 1.0736 lb/mmBtu. For Anclote 2, monitoring showed a heat input of 24,467,624 mmBtu and emissions of 14,294 tons of SO_2. The calculated emission rate is 1.1684 lb/mmBtu. Both units' calculated emission rate of SO_2 is less than 1.2 lb/mmBtu, so the units are eligible to receive allowance allocations under §73.19, which implements section 405(i)(2) of the Act. An attachment is provided which documents the emission rate calculations.

In summary, EPA has determined that Anclote units 1 and 2 are eligible to receive allowances under §73.19. If you have questions about the calculations or the provision, please contact Kathy Barylski of my staff at (202) 564-9074.

Sincerely,

Brian J. McLean, Director
Acid Rain Division

Calculation of SO_2 Emission Rate

The formula for calculating the SO_2 emission rate is:

$$SO2\,Rate\,(lb/mmBtu) = 2000\,lb/tons \times SO2\,Emissions\,(tons) \,/\, Heat\,Input\,(mmBtu)$$

For 1997, the quality assured data under Part 75 and calculated emission rate are:

	SO_2 Emissions	Heat Input	SO_2 Emission Rate
Anclote 1	11,695	21,786,765	1.0736
Anclote 2	14,294	24,467,624	1.1684

Florida Power Corporation Anclote Plant

#6 Oil Emissions Modeling

9/1/98

Introduction: The ambient air quality impact of SO_2, NOx, and particulate matter (PM) emissions from Florida Power Corporation's (FPC) Anclote Plant was assessed with the use of dispersion modeling. Emissions from #6 oil burning were input to the Industrial Source Complex (ISC) model. The emissions impact from Anclote was predicted in an area covering up to a distance of 3 kilometers (km) from the plant. Predicted ambient concentrations are well below the respective National Ambient Air Quality Standards (NAAQS) and State of Florida ambient air quality standards (FAAQS).

Model Used: The latest version of EPA's ISC model, which is called ISC3, was used. For conservatism, FPC utilized the short-term version, which computes concentrations on an hourly basis. For SO_2, the highest 3-hour, 24-hour, and annual concentrations were compared to the NAAQS and FAAQS. For NOx, the highest annual concentrations were compared to the annual NAAQS. Finally, for PM the highest 24-hour and annual concentrations were compared to the NAAQS and FAAQS.

In accordance with EPA modeling guidance, the regulatory default option was chosen for addressing plume rise, calm periods, wind profiles, and temperature gradients with height. Since the area surrounding the plant is dominated by water (Gulf of Mexico) and a suburban landscape, the rural dispersion option was used.

A full year (1986) of hourly meteorological data taken at the Tampa National Weather Service office was input to the model for this analysis.

The receptor network input to the model is comprised of a rectangular grid. The receptors were placed at 400 meter intervals with the Anclote stack at the center of the grid. Receptors were placed to a distance of 3 km from the center. Maximum predicted concentrations were well inside the boundaries of the receptor network, at a distance of approximately 1.5 km from the plant.

Emissions Input: As part of a pollution control project demonstration, FPC has agreed to an annual average #6 oil sulfur content of 1.5%, and a 24-hour average sulfur content of 1.8%. Maximum SO_2, NOx, and PM emissions from the Anclote plant were modeled. In addition, a low load SO_2 scenario (80 MW per unit) was modeled on a short-term basis. The plant has 2 units with a capacity of approximately 535 MW each that discharge emissions through a common stack. Stack parameters input to ISC for the full load cases are as follows:

Height	152.1 meters (499 feet)
Diameter	7.6 meters (24.9 feet)
Temperature	430 degrees K
Exit Velocity	35.1 meters/sec.

For the low load case, the stack gas temperature input was 349 degrees K and the exit velocity was 8.6 meters/sec.

Emissions calculations are as follows:

#6 Oil

Heat input limits: Unit 1 - 4964 mmBtu/hr Unit 2 - 4850 mmBtu/hr
Total heat input at maximum load: 9814 mmBtu/hr

For SO_2, a 1.5% sulfur annual average corresponds to an emission rate of 1.65 lb/mmBtu. A 1.8% sulfur daily average results in an emission rate of 1.98 lb/mmBtu.

#6 oil SO_2 (1.5% S): 9814 mmBtu/hr x 1.65 lb/mmBtu x 453.6 g/lb x 1/3600 sec/hr
= 2,042.1 g/sec

For a 1.8% sulfur limit, the above calculation results in an emission rate of 2,450.6 g/s.

Similarly, the NOx emission rate is based on 0.40 lb/mmBtu, which corresponds to 495.1 g/s. The PM emission rate is based on the permit limit of 0.1 lb/mmBtu, resulting in a rate of 123.8 g/s.

Modeling Results and Conclusion

For SO_2, the 1.5% sulfur limit was modeled on an annual average basis, and the 1.8% 24-hour sulfur limit was modeled on a 3-hour and 24-hour basis. PM concentrations were modeled for 24-hour and annual periods. NOx was modeled as NO_2 on an annual average basis. The following are the highest predicted concentrations in micrograms/cubic meter for these pollutants and averaging times:

	SO_2		PM	NO_2
	Full load	80 MW		
Highest 24-hour avg.	62.6	35.7	3.2	NA
Highest 3-hour avg.	363.8	164.1	NA	NA
Highest Annual avg.	2.2	NA	0.1	0.5

NA = Not Applicable

Highest predicted concentrations are much lower than the corresponding ambient air quality standards.

Complete ISC model outputs of this analysis are attached to this summary.

Anclote SO_2
1.5% S Annual Avg.

```
CO STARTING
CO TITLEONE ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.65 lb/mmBtu
CO TITLETWO 2042 G/SEC EMISS. RATE; ANNUAL CONC. @ FULL LOAD
CO MODELOPT DFAULT CONC   RURAL
CO AVERTIME PERIOD
CO POLLUTID SO2
CO DCAYCOEF   .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED


SO STARTING
** Source Location Cards:
**       SRCID SRCTYP      XS         YS         ZS

SO LOCATION    1 POINT       0.0000      0.0000       .0000

** Source Parameter Cards:
** POINT:  SRCID     QS          HS       TS       VS       DS

SO SRCPARAM    1     2042.1       152.100  430.0000   35.1000    7.6000

SO EMISUNIT   .100000E+07 (GRAMS/SEC)        (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED


RE STARTING
RE GRIDCART CAR1 STA
RE        CAR1 XYINC -3000. 16 400.  -3000. 16 400.
RE        CAR1 END
RE FINISHED


ME STARTING
ME INPUTFIL tpaprl86.bin                    UNFORM
ME ANEMHGHT   6.700 METERS
ME SURFDATA  12842  1986          SURFNAME
ME UAIRDATA  12842  1986          UAIRNAME
ME WINDCATS   1.54   3.09   5.14   8.23   10.80
ME FINISHED


OU STARTING
OU RECTABLE ALLAVE FIRST  SECOND
OU FINISHED

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**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: 1 Source(s); 1 Source Group(s); and 256 Receptor(s)

**The Model Assumes A Pollutant Type of: SO2

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

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
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) = 6.70 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: an_15sul.dta ; **Output Print File: an_15sul.lst
**Detailed Error/Message File: ERRORS.OUT

**MODELOPTs: 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
1	0	0.20421E+04	0.0	0.0	0.0	152.10	430.00	35.10	7.60	NO	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

**MODELOPTs: CONC RURAL FLAT DFAULT

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

```
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
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1111111111 111111
```

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

**MODELOPTs: CONC RURAL FLAT DFAULT

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

FILE: tpaprl86.bin FORMAT: UNFORM
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: SURFNAME NAME: UAIRNAME
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	USTAR	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	18	47.0	1.00	293.2	5	419.0	418.0	0.0000	0.0	0.0000	0	0.00
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0	0.0000	0.0	0.0000	0	0.00
86	1	1	20	127.0	1.00	290.9	6	437.0	430.0	0.0000	0.0	0.0000	0	0.00
86	1	1	21	130.0	1.00	290.9	6	447.0	435.0	0.0000	0.0	0.0000	0	0.00
86	1	1	22	132.0	1.00	289.8	6	456.0	441.0	0.0000	0.0	0.0000	0	0.00
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0	0.0000	0.0	0.0000	0	0.00
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0	0.0000	0.0	0.0000	0	0.00

*** 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.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS)								
	-3000.00	-2600.00	-2200.00	-1800.00	-1400.00	-1000.00	-600.00	-200.00	200.00
3000.00	0.93451	0.70572	0.53299	0.44047	0.40688	0.41893	0.47568	0.55885	0.65132
2600.00	1.05364	0.81559	0.57904	0.41710	0.34420	0.33917	0.39675	0.49741	0.60327
2200.00	1.10752	0.90810	0.65903	0.43044	0.29455	0.25736	0.31110	0.43430	0.56062
1800.00	1.10244	0.94014	0.72968	0.48921	0.28777	0.17316	0.20016	0.36386	0.53043
1400.00	1.05549	0.92294	0.75817	0.56312	0.31689	0.14406	0.11755	0.30331	0.51290
1000.00	0.98639	0.86820	0.74695	0.58924	0.42402	0.21478	0.04267	0.06359	0.14828
600.00	0.93826	0.81159	0.70170	0.58087	0.51823	0.23950	0.00467	0.00000	0.00000
200.00	0.93278	0.78931	0.66177	0.53612	0.46133	0.11303	0.00000	0.00000	0.00000
-200.00	0.94175	0.79329	0.65769	0.52211	0.44535	0.11142	0.00000	0.00000	0.00000
-600.00	0.92152	0.77972	0.64719	0.49478	0.40661	0.17258	0.00464	0.00000	0.00000
-1000.00	0.92063	0.77143	0.61720	0.44288	0.30871	0.20354	0.09493	0.01104	0.00973
-1400.00	0.90634	0.73871	0.57115	0.42774	0.28836	0.20683	0.12836	0.04630	0.05376
-1800.00	0.85919	0.69976	0.55572	0.43483	0.32764	0.21083	0.11306	0.05642	0.06437
-2200.00	0.81654	0.69004	0.57028	0.45294	0.33451	0.21463	0.12502	0.08432	0.09362
-2600.00	0.79977	0.69173	0.57566	0.45416	0.32503	0.20813	0.13935	0.11318	0.12418
-3000.00	0.78357	0.67595	0.55996	0.43514	0.30677	0.20924	0.16099	0.14429	0.15736

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 600.00	1000.00	1400.00	1800.00	2200.00	2600.00	3000.00
3000.00	0.71603	0.72826	0.72084	0.73920	0.82302	0.97870	1.18658
2600.00	0.65840	0.65284	0.64490	0.70081	0.85349	1.08826	1.36457
2200.00	0.60687	0.58250	0.58819	0.70478	0.94260	1.25770	1.59663
1800.00	0.55204	0.51123	0.57731	0.77829	1.09907	1.48050	1.86126
1400.00	0.52065	0.48663	0.61075	0.93244	1.30611	1.71697	2.10924
1000.00	0.25764	0.51309	0.76413	1.07089	1.48087	1.86719	2.22723
600.00	0.01169	0.47022	0.89171	1.07476	1.46597	1.80836	2.14647
200.00	0.00000	0.17970	0.68140	0.86505	1.26575	1.62461	1.98159
-200.00	0.00000	0.08060	0.40865	0.61441	0.99613	1.34639	1.69581
-600.00	0.00022	0.07382	0.23608	0.38725	0.67439	0.96645	1.27969
-1000.00	0.01885	0.03714	0.11404	0.23678	0.41939	0.63114	0.88298
-1400.00	0.06519	0.05408	0.09917	0.20169	0.30567	0.44042	0.61501
-1800.00	0.08450	0.09723	0.14522	0.21225	0.29159	0.37765	0.48301
-2200.00	0.11571	0.13318	0.17604	0.23974	0.31320	0.38234	0.44784
-2600.00	0.14247	0.15426	0.19472	0.26273	0.33372	0.40131	0.45672
-3000.00	0.17321	0.17706	0.20261	0.27129	0.34478	0.41007	0.46759

**MODELOPTs: CONC RURAL FLAT DFAULT

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

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	2.22723 AT (3000.00, 1000.00, 0.00, 0.00)	GC	CAR1
	2ND HIGHEST VALUE IS	2.14647 AT (3000.00, 600.00, 0.00, 0.00)	GC	CAR1
	3RD HIGHEST VALUE IS	2.10924 AT (3000.00, 1400.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

****

*** RUN INFORMATION PAGE ***

INPUT FILENAME IS: an_15sul.dta
OUTPUT FILENAME IS: an_15sul.lst
RUN TITLE1 IS: ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.65 lb/mmBtu
2042 G/SEC EMISS. RATE; ANNUAL CONC. @ FULL LOAD
COMPUTER ID NAME (VOLUME): no label

BEGINNING HOUR,MINUTE,SECOND ------- : 11:18:01
BEGINNING MONTH,DAY,YEAR ---------- : 09/01/98

ENDING HOUR,MINUTE,SECOND -------- : 11:18:22
ENDING MONTH,DAY,YEAR ---------- : 09/01/98

TOTAL CPU SECONDS ------------ : 21.

****

Anclote SO_2
1.8% S Short-term Avg.

```
CO STARTING
CO TITLEONE ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.98 lb/mmBtu
CO TITLETWO 2451 G/SEC EMISS. RATE; 3,24 hr CON. @ FULL LOAD
CO MODELOPT DFAULT CONC   RURAL
CO AVERTIME 3 24
CO POLLUTID SO2
CO DCAYCOEF   .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED


SO STARTING
** Source Location Cards:
**       SRCID SRCTYP      XS         YS         ZS

SO LOCATION    1 POINT       0.0000      0.0000       .0000

** Source Parameter Cards:
** POINT:  SRCID      QS          HS       TS        VS       DS

SO SRCPARAM    1     2450.6        152.100  430.0000   35.1000    7.6000

SO EMISUNIT   .100000E+07 (GRAMS/SEC)        (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED


RE STARTING
RE GRIDCART CAR1 STA
RE        CAR1 XYINC -3000. 16 400.  -3000. 16 400.
RE        CAR1 END
RE FINISHED


ME STARTING
ME INPUTFIL tpaprl86.bin                    UNFORM
ME ANEMHGHT   6.700 METERS
ME SURFDATA  12842  1986          SURFNAME
ME UAIRDATA  12842  1986          UAIRNAME
ME WINDCATS   1.54   3.09   5.14   8.23   10.80
ME FINISHED


OU STARTING
OU RECTABLE ALLAVE FIRST  SECOND
OU FINISHED

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**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 2 Short Term Average(s) of: 3-HR 24-HR

**This Run Includes: 1 Source(s); 1 Source Group(s); and 256 Receptor(s)

**The Model Assumes A Pollutant Type of: SO2

**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) = 6.70 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: an_18sul.dta ; **Output Print File: an_18sul.lst
**Detailed Error/Message File: ERRORS.OUT

**MODELOPTs: 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
1	0	0.24506E+04	0.0	0.0	0.0	152.10	430.00	35.10	7.60	NO	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

**MODELOPTs: CONC RURAL FLAT DFAULT

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

```
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 1111111111 1111111111 1111111111 1111111111
1111111111 111111
```

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

**MODELOPTs: CONC RURAL FLAT DFAULT

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

FILE: tpaprl86.bin FORMAT: UNFORM
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: SURFNAME NAME: UAIRNAME
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	USTAR	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	18	47.0	1.00	293.2	5	419.0	418.0	0.0000	0.0	0.0000	0	0.00
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0	0.0000	0.0	0.0000	0	0.00
86	1	1	20	127.0	1.00	290.9	6	437.0	430.0	0.0000	0.0	0.0000	0	0.00
86	1	1	21	130.0	1.00	290.9	6	447.0	435.0	0.0000	0.0	0.0000	0	0.00
86	1	1	22	132.0	1.00	289.8	6	456.0	441.0	0.0000	0.0	0.0000	0	0.00
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0	0.0000	0.0	0.0000	0	0.00
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0	0.0000	0.0	0.0000	0	0.00

*** 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.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	113.52367 (86051612)	111.55085 (86082912)	89.22980 (86082912)	104.55141 (86052812)	108.90842 (86052812)
2600.0	117.29279 (86051612)	96.80557 (86051612)	95.38003 (86082912)	69.12270 (86052812)	95.69305 (86052812)
2200.0	121.13721 (86092915)	106.13638 (86082515)	102.16341 (86062215)	89.79748 (86062215)	62.73760 (86052812)
1800.0	132.82155 (86082615)	125.36060 (86080812)	122.76752 (86080812)	117.29839 (86062215)	99.48739 (86062215)
1400.0	199.23311 (86082615)	186.91002 (86082615)	157.95015 (86082615)	149.45741 (86080812)	140.21864 (86062215)
1000.0	225.15247 (86082615)	245.28735 (86082615)	253.74727 (86082615)	241.91370 (86082615)	192.91649 (86080812)
600.0	182.23872 (86082615)	220.00871 (86082615)	263.46329 (86082615)	317.65674 (86082615)	335.82068 (86082615)
200.0	120.61973 (86060412)	135.67563 (86081015)	161.51744 (86082615)	211.78102 (86082615)	231.77045 (86082615)
-200.0	128.30412 (86070612)	140.73695 (86070612)	155.22144 (86070612)	179.17967 (86070612)	186.40320 (86070612)
-600.0	122.07618 (86090112)	140.88922 (86090112)	160.39912 (86090112)	188.78206 (86080912)	204.04744 (86080912)
-1000.0	135.77876 (86080912)	147.69168 (86080912)	152.60332 (86080912)	146.52025 (86080912)	163.45714 (86062715)
-1400.0	121.78358 (86080912)	114.67264 (86080912)	112.76883 (86040312)	145.02722 (86062715)	164.07556 (86062715)
-1800.0	99.26367 (86110412)	105.66028 (86062715)	134.26668 (86062715)	147.40520 (86062715)	133.69472 (86080915)
-2200.0	107.81937 (86091915)	126.68836 (86062715)	139.82664 (86062715)	124.07984 (86062715)	147.04272 (86052215)
-2600.0	121.10629 (86062715)	135.55098 (86062715)	128.59773 (86062715)	116.62411 (86052215)	144.25252 (86052215)
-3000.0	132.03526 (86062715)	131.99028 (86062715)	113.98782 (86042312)	123.68047 (86052215)	128.78224 (86052215)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	121.07088 (86092312)	146.76038 (86092312)	142.69269 (86071712)	166.90486 (86080312)	134.68542 (86073112)
2600.0	110.70470 (86092312)	147.78355 (86092312)	154.36496 (86071712)	154.66216 (86072515)	155.51228 (86073112)
2200.0	96.74619 (86092312)	148.72888 (86092312)	167.52518 (86071712)	173.00600 (86072515)	177.14000 (86073112)
1800.0	76.71557 (86092312)	151.34879 (86092312)	191.13988 (86071712)	203.21782 (86072515)	200.92561 (86073112)
1400.0	109.74807 (86062215)	136.74254 (86092312)	187.64333 (86071712)	228.32426 (86072515)	217.00659c(86090115)
1000.0	149.91449 (86062215)	47.10582 (86062215)	51.86873 (86092312)	89.08729 (86073112)	134.25049c(86090115)
600.0	138.18817 (86082615)	6.78918 (86062215)	0.00151 (86092312)	0.00242 (86073112)	11.54944 (86090715)
200.0	62.92689 (86082615)	0.00195 (86082615)	0.00000 (86010324)	0.00000 (86111809)	0.00298 (86071612)
-200.0	61.16990 (86090112)	0.00170 (86090112)	0.00000c(86121903)	0.00000c(86021809)	0.00116 (86062012)
-600.0	91.08949 (86040312)	7.24191 (86062715)	0.00067 (86052215)	0.00048 (86022403)	0.46960 (86051115)
-1000.0	180.30511 (86062715)	166.29945 (86052215)	30.16948 (86052215)	30.86861 (86062615)	58.42922 (86062615)
-1400.0	183.97343 (86052215)	217.80037 (86052215)	79.72059 (86052215)	163.14561 (86062615)	191.07550 (86062615)
-1800.0	183.92342 (86052215)	154.00418 (86052215)	56.88409 (86052215)	151.91377 (86062615)	190.47722 (86062615)
-2200.0	158.53786 (86052215)	105.98245 (86052215)	46.78139 (86062615)	121.10326 (86062615)	170.21849 (86062615)
-2600.0	127.37424 (86052215)	74.03808 (86052215)	39.76124 (86062615)	99.74615 (86062615)	152.45598 (86062615)
-3000.0	98.20298 (86052215)	53.05090 (86052215)	51.08304 (86082412)	83.47566 (86062615)	134.92973 (86062615)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	139.42967 (86073112)	140.50005c(86090115)	190.84258c(86090115)	207.14967c(86090115)	189.56297c(86090115)
2600.0	142.69914 (86073112)	192.94014c(86090115)	228.35893c(86090115)	215.48689c(86090115)	172.17772c(86090115)
2200.0	183.06000c(86090115)	248.63045c(86090115)	247.51599c(86090115)	197.24463c(86090115)	136.89441 (86080115)
1800.0	264.76514c(86090115)	286.39493c(86090115)	230.02148c(86090115)	153.23680 (86080115)	172.26959 (86080115)
1400.0	344.50858c(86090115)	278.74414c(86090115)	176.46913 (86080115)	218.60258 (86071612)	231.45332 (86071612)
1000.0	273.16763c(86090115)	263.54407 (86071612)	293.79419 (86071612)	274.30841 (86071612)	236.33131 (86071612)
600.0	216.30901 (86071612)	363.83081 (86071612)	290.82239 (86071612)	213.61548 (86071612)	175.67381 (86071512)
200.0	70.30254 (86090815)	263.09979 (86071315)	295.26462 (86071315)	265.34232 (86071315)	246.84343 (86071315)
-200.0	59.38921 (86071315)	311.44308 (86071315)	334.40649 (86071315)	295.43597 (86071315)	272.78183 (86071315)
-600.0	99.01807 (86051115)	206.72394 (86062012)	182.69530 (86062012)	181.84535 (86071315)	185.44856 (86071315)
-1000.0	47.24898 (86051115)	122.66519 (86051115)	145.85251 (86051115)	144.63509 (86062012)	139.52174 (86062012)
-1400.0	91.45303 (86062615)	40.71486 (86051115)	77.30570 (86051115)	102.46354 (86051115)	114.31131 (86051115)
-1800.0	129.02632 (86062615)	55.13937 (86062615)	59.62046 (86042212)	81.93897 (86042212)	72.69431 (86042212)
-2200.0	147.26302 (86062615)	84.04600 (86062615)	49.25843 (86061815)	85.27506 (86042212)	105.47446 (86042212)
-2600.0	154.55376 (86062615)	109.88422 (86062615)	78.24567 (86061815)	68.20962 (86061815)	98.45185 (86042212)
-3000.0	153.47552 (86062615)	129.27489 (86062615)	95.13172 (86061815)	98.14850 (86061815)	82.10799 (86061815)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	152.55809c(86090115)
2600.0	123.87840 (86080115)
2200.0	164.60942 (86080115)
1800.0	185.80328 (86071612)
1400.0	221.32629 (86071612)
1000.0	194.25316 (86071612)
600.0	159.49089 (86071512)
200.0	232.53133 (86071315)
-200.0	254.36140 (86071315)
-600.0	185.68089 (86071315)
-1000.0	127.19436 (86062012)
-1400.0	114.70694 (86051115)
-1800.0	87.41639 (86051115)
-2200.0	93.97993 (86042212)
-2600.0	114.86546 (86042212)
-3000.0	101.28916 (86042212)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	101.59805 (86082912)	75.64199 (86082515)	73.63709 (86052315)	90.08856 (86051215)	82.76638 (86051215)
2600.0	103.49857 (86092915)	93.25033 (86082515)	81.44006 (86062215)	68.24210 (86051215)	74.18246 (86051215)
2200.0	109.35687 (86080812)	102.45208 (86080812)	91.74926 (86082515)	67.93665 (86082912)	57.95861 (86062215)
1800.0	115.63090 (86062312)	120.65685c(86070815)	112.12153c(86070815)	98.31089 (86080812)	57.23526 (86080812)
1400.0	120.01240 (86083115)	128.04445 (86083115)	142.26067 (86080812)	137.30838c(86070815)	124.19454 (86080812)
1000.0	115.29926 (86052912)	125.15446 (86083115)	143.33537 (86083115)	159.86061 (86083115)	185.10474 (86082615)
600.0	134.84644 (86081015)	144.13937 (86081015)	151.30603 (86081015)	166.09608 (86052912)	181.17560 (86083115)
200.0	120.38498 (86081015)	125.80242 (86082615)	153.76100 (86081015)	183.54871 (86081015)	181.78621 (86081015)
-200.0	85.61615 (86060412)	98.90045 (86082215)	116.64727 (86090112)	149.69223 (86090112)	180.55556 (86090112)
-600.0	111.43356 (86080612)	131.57349 (86080912)	156.85732 (86080912)	182.09285 (86090112)	187.12567 (86090112)
-1000.0	126.36205 (86090112)	132.99574 (86042415)	134.08922 (86042415)	125.19758 (86042415)	156.80663 (86040312)
-1400.0	108.19767 (86042415)	102.48072 (86042415)	107.11628 (86062715)	126.52802 (86040312)	114.12973 (86040312)
-1800.0	91.82516 (86041915)	102.34567 (86040312)	106.81470 (86040312)	92.05198 (86040312)	128.05592 (86052215)
-2200.0	102.54675 (86062715)	100.16711 (86091915)	77.48148 (86040312)	110.78367 (86080915)	131.67519 (86080915)
-2600.0	110.66425 (86091915)	86.43301 (86091915)	92.72376 (86080915)	115.98706 (86080915)	113.99377 (86080915)
-3000.0	90.54900 (86091915)	96.89056 (86042312)	107.47378 (86062715)	107.98828 (86080915)	91.12875 (86080915)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	79.09983 (86050612)	101.96460 (86071712)	123.02859 (86080612)	139.20152 (86072515)	132.34811 (86080312)
2600.0	68.64970 (86052812)	102.71453 (86071712)	133.82158 (86080612)	150.18483 (86080612)	130.55399 (86072515)
2200.0	61.50325 (86052812)	101.65621 (86071712)	146.39493 (86080612)	165.18135 (86080612)	152.87135 (86061415)
1800.0	53.88053 (86062215)	95.53903 (86071712)	165.68686 (86080612)	189.70598 (86080612)	180.78369 (86061415)
1400.0	60.65992 (86080812)	66.58964 (86071712)	171.80318 (86080612)	209.30940 (86073112)	210.76062 (86073112)
1000.0	147.34355 (86080812)	44.20609 (86092312)	39.81289 (86080612)	72.70766 (86072515)	112.78703 (86070515)
600.0	131.00476 (86080812)	4.21905 (86080812)	0.00028 (86072606)	0.00158 (86062815)	6.22110 (86080115)
200.0	52.21410 (86052912)	0.00179 (86052912)	0.00000 (86080709)	0.00000c(86090621)	0.00220 (86071512)
-200.0	54.42046 (86082215)	0.00147 (86082215)	0.00000 (86010709)	0.00000 (86042909)	0.00089 (86051115)
-600.0	82.91582 (86062715)	4.10438 (86040312)	0.00035 (86101606)	0.00023 (86100321)	0.21556 (86062012)
-1000.0	121.55179 (86040312)	67.37837 (86080915)	3.71084 (86080915)	0.03517 (86052215)	0.63813 (86051115)
-1400.0	167.33966 (86080915)	130.09001 (86080915)	36.70927 (86062615)	3.99668 (86052215)	3.85693c(86072215)
-1800.0	146.82170 (86080915)	98.13317 (86080915)	52.02689 (86062615)	13.64116 (86052215)	17.22690c(86072215)
-2200.0	112.94407 (86080915)	62.59492 (86080915)	43.06954 (86052215)	27.54794 (86052215)	30.36064c(86072215)
-2600.0	81.71889 (86080915)	38.83064 (86032215)	36.33514 (86052215)	38.26110 (86052215)	34.65009c(86072215)
-3000.0	56.85929 (86080915)	51.72118 (86032215)	50.49077 (86030212)	54.61392 (86082412)	46.88307 (86052215)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	130.40712 (86061415)	111.76236 (86061415)	131.90100 (86070515)	127.64133 (86070515)	110.22994 (86022215)
2600.0	139.53049 (86061415)	128.13039 (86070515)	133.60101 (86070515)	107.08563 (86090715)	123.38389 (86090715)
2200.0	141.68443 (86061415)	142.23161 (86070515)	117.98043 (86090715)	139.67699 (86090715)	134.51567c(86090115)
1800.0	153.22385 (86070515)	135.75296 (86070515)	160.80164 (86090715)	149.85956c(86090115)	162.37529 (86071612)
1400.0	170.89192 (86070515)	192.69360 (86090715)	174.48499 (86071612)	178.53802 (86080115)	160.93690 (86080115)
1000.0	240.03130 (86090715)	218.02431 (86080115)	183.19902 (86080115)	167.87949 (86062015)	177.54948 (86071512)
600.0	176.20168 (86080115)	229.92346 (86091212)	201.44952 (86071512)	189.02742 (86071512)	157.54054 (86071612)
200.0	61.62183 (86050815)	217.69965 (86090815)	194.99377 (86050815)	166.75134 (86050815)	150.37680 (86050815)
-200.0	54.70388 (86062412)	196.64162 (86062412)	184.00551 (86062412)	156.85924 (86062412)	144.42180 (86062815)
-600.0	97.86190 (86062012)	195.24217 (86051115)	168.57730 (86071315)	149.14682 (86062012)	124.23648 (86062815)
-1000.0	33.87481 (86062012)	104.28484 (86062012)	137.03835 (86062012)	143.04750 (86051115)	129.54512 (86051115)
-1400.0	8.82830 (86051115)	27.53259 (86062012)	60.70111 (86062012)	87.89203 (86062012)	105.52609 (86062012)
-1800.0	23.00496 (86061815)	28.86829 (86061815)	34.20254 (86041715)	51.00995 (86051115)	72.46027 (86051115)
-2200.0	35.37179c(86072215)	52.56887 (86061815)	41.95620 (86042212)	50.06863 (86052212)	60.27871 (86041715)
-2600.0	52.15921c(86072215)	67.07492 (86061815)	56.66575 (86042315)	58.35361 (86042212)	71.60729 (86052212)
-3000.0	59.79199c(86072215)	67.92217 (86061815)	81.90592 (86062615)	65.74609 (86070618)	71.10694 (86052212)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	125.36610 (86022215)
2600.0	121.99896c(86090115)
2200.0	122.17969 (86071612)
1800.0	173.90862 (86080115)
1400.0	151.78700 (86062015)
1000.0	184.29988 (86071512)
600.0	140.27368 (86071315)
200.0	137.11005 (86050815)
-200.0	144.56956 (86062815)
-600.0	131.76819 (86062815)
-1000.0	111.47353 (86051115)
-1400.0	113.00324 (86062012)
-1800.0	74.41510 (86062012)
-2200.0	57.35443 (86052115)
-2600.0	71.10703 (86052212)
-3000.0	87.43167 (86052212)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	16.75589c(86101124)	17.61954c(86082924)	15.35549c(86040324)	20.95866 (86052824)	20.42568 (86052824)
2600.0	18.88616 (86051624)	15.54172c(86082524)	15.06236c(86082924)	14.33307 (86052824)	18.53841 (86052824)
2200.0	20.86049c(86080824)	17.68940c(86082524)	15.29154c(86082524)	11.71271c(86062224)	12.64001 (86052824)
1800.0	26.41648c(86080824)	23.74009c(86080824)	20.18433c(86080824)	15.32990c(86082524)	12.97662c(86062224)
1400.0	34.47046c(86082624)	32.15030c(86082624)	26.86589c(86082624)	23.91024c(86080824)	18.77576c(86080824)
1000.0	37.85330c(86082624)	41.30281c(86082624)	42.72737c(86082624)	40.53635c(86082624)	30.87126c(86082624)
600.0	30.39549c(86082624)	36.70702c(86082624)	43.97427c(86082624)	52.97593c(86082624)	55.97527c(86082624)
200.0	19.54476 (86081024)	20.96757c(86082624)	26.92010c(86082624)	35.29707c(86082624)	38.62852c(86082624)
-200.0	16.16624 (86070624)	17.70099 (86070624)	19.49261 (86070624)	24.94871c(86090124)	30.09259c(86090124)
-600.0	21.22746c(86042424)	23.48154c(86090124)	26.73319c(86090124)	30.34881c(86090124)	31.42507c(86080924)
-1000.0	24.09861c(86042424)	24.39867c(86042424)	23.75447c(86080924)	24.84764c(86080924)	26.13555c(86040324)
-1400.0	23.28539c(86042424)	20.94833c(86042424)	18.84996c(86040324)	23.18607c(86062724)	25.95286c(86062724)
-1800.0	19.30059c(86042424)	17.80115c(86062724)	21.67984c(86062724)	23.42883c(86062724)	21.34266c(86052224)
-2200.0	17.83369c(86062724)	20.68251c(86062724)	22.28707c(86062724)	20.04226c(86062724)	24.50712c(86052224)
-2600.0	19.97267c(86062724)	21.66419c(86062724)	20.73586c(86062724)	19.73814c(86042324)	24.04209c(86052224)
-3000.0	21.15370c(86062724)	21.21697c(86062724)	22.40412c(86042324)	21.33951c(86042324)	21.46372c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	18.14523c(86092324)	22.68836 (86050624)	25.01493 (86080624)	27.91585 (86080624)	20.32786 (86080624)
2600.0	16.82131c(86092324)	19.96139c(86092324)	27.21086 (86080624)	30.54163 (86080624)	20.61379c(86072524)
2200.0	14.59257c(86092324)	20.09190c(86092324)	29.76720 (86080624)	33.59262 (86080624)	22.14250 (86073124)
1800.0	11.08230c(86092324)	20.11435c(86092324)	33.48026 (86080624)	38.36145 (86080624)	25.11570 (86073124)
1400.0	14.31497c(86062224)	17.91392c(86092324)	34.00171 (86080624)	40.31961 (86080624)	36.16777c(86090124)
1000.0	22.10751c(86080824)	6.14424c(86062224)	8.70663 (86080624)	11.99640 (86080624)	22.37508c(86090124)
600.0	23.03141c(86082624)	0.88555c(86062224)	0.00020c(86092324)	0.00030 (86073124)	1.92491c(86090724)
200.0	10.48796c(86082624)	0.00038c(86082624)	0.00000c(86010324)	0.00000 (86111824)	0.00050c(86080724)
-200.0	10.19498c(86090124)	0.00028c(86090124)	0.00000c(86121924)	0.00000c(86021824)	0.00017c(86062024)
-600.0	15.18159c(86040324)	1.14346c(86062724)	0.00011c(86052224)	0.00006 (86022424)	0.06126c(86051124)
-1000.0	28.47029c(86062724)	27.71658c(86052224)	5.02825c(86052224)	5.14477c(86062624)	9.73820c(86062624)
-1400.0	30.66224c(86052224)	36.30006c(86052224)	13.28676c(86052224)	27.19106c(86062624)	31.84592c(86062624)
-1800.0	30.65390c(86052224)	25.66736c(86052224)	9.48068c(86052224)	25.32366c(86062624)	31.74621c(86062624)
-2200.0	26.42298c(86052224)	17.66374c(86052224)	8.37602c(86062624)	20.21400c(86062624)	28.36996c(86062624)
-2600.0	21.22904c(86052224)	12.33968c(86052224)	7.44181c(86062624)	16.69136c(86062624)	25.41084c(86062624)
-3000.0	16.36716c(86052224)	12.10673c(86032824)	9.59212c(86032824)	14.00093c(86062624)	22.49104c(86062624)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	17.78279c(86061424)	23.41667c(86090124)	31.80709c(86090124)	34.52495c(86090124)	31.59383c(86090124)
2600.0	20.05252c(86090124)	32.15669c(86090124)	38.05982c(86090124)	35.91448c(86090124)	28.69629c(86090124)
2200.0	30.51000c(86090124)	41.43841c(86090124)	41.25267c(86090124)	32.87410c(86090124)	24.81239c(86071624)
1800.0	44.12752c(86090124)	47.73249c(86090124)	38.33691c(86090124)	29.74086c(86071624)	40.22340c(86071624)
1400.0	57.41810c(86090124)	46.45736c(86090124)	36.26500c(86071624)	48.06430c(86071624)	53.05946c(86071624)
1000.0	45.52794c(86090124)	46.54189c(86071624)	56.70091c(86071624)	57.90324c(86071624)	53.86979c(86071624)
600.0	36.15145c(86071624)	62.55400c(86071624)	54.30373c(86071624)	44.65565c(86071624)	36.76424c(86071624)
200.0	11.00903c(86080724)	43.85602c(86071324)	49.28301c(86071324)	44.48112c(86071324)	41.46339c(86071324)
-200.0	9.89820c(86071324)	51.90737c(86071324)	55.73908c(86071324)	49.26633c(86071324)	45.50359c(86071324)
-600.0	13.98037c(86062024)	29.53855c(86062024)	28.12662c(86071324)	30.39778c(86071324)	30.98448c(86071324)
-1000.0	6.16297c(86051124)	16.00316c(86051124)	19.64352c(86062024)	20.95055c(86062024)	20.45729c(86062024)
-1400.0	15.24225c(86062624)	5.31148c(86051124)	10.10547c(86051124)	13.48726c(86051124)	15.36448c(86062024)
-1800.0	21.50440c(86062624)	9.19322c(86062624)	9.40317c(86052224)	12.91564 (86042224)	14.98950 (86042224)
-2200.0	24.54384c(86062624)	14.00801c(86062624)	10.81898c(86052224)	16.00346c(86052224)	16.87695 (86042224)
-2600.0	25.75896c(86062624)	18.31405c(86062624)	11.70382c(86090324)	16.91804c(86052224)	21.85226c(86052224)
-3000.0	25.57928c(86062624)	21.54581c(86062624)	13.65100c(86062624)	15.19104c(86090324)	21.95617c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	25.42635c(86090124)
2600.0	21.43756c(86080124)
2200.0	33.42023c(86071624)
1800.0	45.72441c(86071624)
1400.0	52.66086c(86071624)
1000.0	47.61877c(86071624)
600.0	32.74304c(86071524)
200.0	39.09343c(86071324)
-200.0	42.43216c(86071324)
-600.0	31.00718c(86071324)
-1000.0	20.30959c(86050924)
-1400.0	16.80697c(86062024)
-1800.0	13.30943 (86042224)
-2200.0	19.90398 (86042224)
-2600.0	21.62351c(86052224)
-3000.0	26.00699c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS)				
	-3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	16.05244c(86082924)	13.86721c(86040324)	14.08917c(86082924)	14.49680c(86051224)	14.40601c(86051224)
2600.0	17.03690c(86082524)	14.65637c(86082924)	12.30585c(86040324)	11.83217c(86040324)	12.11761c(86051224)
2200.0	20.16274 (86051624)	17.10580c(86080824)	13.32566c(86062224)	10.72751c(86082924)	8.81586c(86051224)
1800.0	23.68025c(86082624)	18.77885c(86082524)	18.63699c(86082524)	15.29979c(86062224)	9.21641c(86082524)
1400.0	27.02815c(86080824)	26.80630c(86080824)	25.94323c(86080824)	20.63191c(86070824)	18.28939c(86062224)
1000.0	18.83994c(86080824)	21.11393c(86080824)	23.53312c(86080824)	26.41571c(86080824)	29.33448c(86080824)
600.0	18.70377 (86081024)	19.08821 (86081024)	19.41954 (86081024)	20.78423 (86052924)	25.88226c(86083124)
200.0	16.66176c(86082624)	20.06719 (86081024)	21.03313 (86081024)	23.47979 (86081024)	22.76789 (86081024)
-200.0	15.74857c(86042424)	16.48341c(86082224)	19.44122c(86090124)	23.71271c(86082224)	25.05723c(86082224)
-600.0	20.34604c(86090124)	22.72165c(86042424)	24.51172c(86042424)	28.58827c(86080924)	31.18761c(86090124)
-1000.0	21.06034c(86090124)	22.39348c(86080924)	23.46729c(86042424)	20.46267c(86042424)	25.83982c(86062724)
-1400.0	18.60701c(86080924)	18.29995c(86080924)	17.93042c(86080924)	21.10301c(86040324)	22.37204c(86080924)
-1800.0	14.60980c(86040324)	17.10307c(86040324)	17.81569c(86040324)	17.00532c(86080924)	21.30997c(86080924)
-2200.0	15.30867c(86040324)	15.21314c(86040324)	13.27860c(86080924)	17.54835c(86080924)	19.99407c(86080924)
-2600.0	15.97091c(86060324)	13.46876c(86060324)	16.65491c(86042324)	19.43735c(86052224)	17.16348c(86080924)
-3000.0	15.76015c(86102024)	17.53035c(86042324)	18.36209c(86062724)	20.61341c(86052224)	13.69675c(86080924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	16.54520 (86050624)	19.73912c(86092324)	18.67500 (86050624)	22.75987c(86080324)	19.94448c(86072524)
2600.0	12.41405 (86052824)	17.92262 (86050624)	20.13456c(86071724)	24.42035c(86072524)	20.41967 (86080624)
2200.0	11.49156 (86052824)	13.68898 (86080624)	21.85111c(86071724)	27.31674c(86072524)	20.84609c(86061424)
1800.0	7.10263 (86052824)	12.46165c(86071724)	24.93129c(86071724)	32.08702c(86072524)	24.96783c(86082724)
1400.0	9.11662c(86080824)	8.68573c(86071724)	24.47522c(86071724)	36.05120c(86072524)	29.19996c(86082724)
1000.0	19.55406c(86062224)	5.76791c(86092324)	6.76551c(86092324)	11.48016c(86072524)	15.10597c(86082724)
600.0	19.65677c(86080824)	0.63286c(86080824)	0.00004c(86072624)	0.00026c(86082724)	1.03685c(86080124)
200.0	6.59617c(86060424)	0.00022 (86052924)	0.00000c(86120124)	0.00000c(86090624)	0.00050c(86071624)
-200.0	9.07008c(86082224)	0.00026c(86082224)	0.00000c(86070724)	0.00000c(86042924)	0.00012c(86051124)
-600.0	13.09203c(86062724)	0.68406c(86040324)	0.00004 (86101624)	0.00003c(86100324)	0.03081c(86062024)
-1000.0	20.92032c(86080924)	10.13072c(86080924)	0.55663c(86080924)	0.00586c(86052224)	0.08323c(86051124)
-1400.0	26.24128c(86080924)	19.52053c(86080924)	6.13600c(86062624)	0.66612c(86052224)	0.55295c(86072224)
-1800.0	22.17265c(86080924)	14.72046c(86080924)	8.85380c(86062624)	2.27355c(86052224)	2.48272c(86072224)
-2200.0	16.97304c(86080924)	9.39005c(86080924)	7.17826c(86052224)	4.59136c(86052224)	4.41403c(86072224)
-2600.0	12.26654c(86080924)	8.87223c(86032824)	7.27050c(86032824)	6.37688c(86052224)	5.63076c(86052224)
-3000.0	10.63410c(86032824)	8.84182c(86052224)	8.51384c(86082424)	9.10232c(86082424)	7.81672c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	17.42871 (86073124)	20.78757c(86082924)	17.77874c(86082924)	15.95517 (86070524)	18.54893c(86022224)
2600.0	19.89999c(86082724)	17.67973c(86082724)	16.70013 (86070524)	17.84760c(86090724)	20.56398c(86090724)
2200.0	22.03522c(86082724)	17.77895 (86070524)	19.66340c(86090724)	23.27950c(86090724)	23.64508c(86080124)
1800.0	22.40532c(86082724)	21.77886c(86090724)	26.80028c(86090724)	26.31331c(86080124)	30.92879c(86080124)
1400.0	24.43505c(86090724)	32.11560c(86090724)	30.01408c(86080124)	31.58011c(86080124)	30.77544c(86080124)
1000.0	40.00521c(86090724)	36.42998c(86080124)	34.38304c(86080724)	35.50937c(86080724)	37.80706c(86071524)
600.0	29.36753c(86080124)	46.17475c(86080724)	41.36175c(86080724)	34.35705c(86080724)	33.66523c(86071524)
200.0	10.15333c(86071624)	32.16946c(86050824)	29.33546c(86050824)	25.51107c(86050824)	27.05615c(86081824)
-200.0	8.20803c(86062424)	29.80575c(86062424)	29.71594c(86062424)	28.55940c(86062424)	28.34267c(86062424)
-600.0	12.91542c(86051124)	25.47346c(86051124)	26.21569c(86062024)	21.75701c(86062024)	22.01147c(86062424)
-1000.0	4.83928c(86062024)	14.90036c(86062024)	19.09792c(86051124)	19.00493c(86051124)	17.63643c(86051124)
-1400.0	1.15152c(86051124)	4.00507c(86062624)	8.68443c(86062024)	12.63932c(86062024)	15.24507c(86051124)
-1800.0	2.98636 (86061824)	5.56242c(86071924)	8.63996c(86071924)	10.34378c(86052224)	9.54367c(86051124)
-2200.0	5.19283c(86072224)	7.17127 (86061824)	10.44557c(86071924)	13.29289c(86071924)	16.44134c(86052224)
-2600.0	7.58497c(86072224)	8.66215 (86061824)	11.15487 (86061824)	14.59223c(86071924)	16.59699c(86071924)
-3000.0	8.65674c(86072224)	8.59700 (86061824)	12.59954 (86061824)	14.72028 (86061824)	17.18000c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	20.13971c(86022224)
2600.0	20.71518c(86071624)
2200.0	29.67386c(86080124)
1800.0	33.67572c(86080124)
1400.0	35.04977c(86071524)
1000.0	40.49583c(86071524)
600.0	30.96523c(86071624)
200.0	35.45493c(86081824)
-200.0	27.86469c(86062424)
-600.0	23.27248c(86062424)
-1000.0	18.92663c(86062024)
-1400.0	15.71590c(86051124)
-1800.0	11.66920c(86051124)
-2200.0	13.02318c(86052224)
-2600.0	18.70450 (86042224)
-3000.0	18.43312c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 3-HR RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	363.83081	ON 86071612: AT (1400.00, 600.00, 0.00, 0.00)	GC	CAR1
	HIGH 2ND HIGH VALUE IS	240.03130	ON 86090715: AT (1000.00, 1000.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	62.55400c	ON 86071624: AT (1400.00, 600.00, 0.00, 0.00)	GC	CAR1
	HIGH 2ND HIGH VALUE IS	46.17475c	ON 86080724: AT (1400.00, 600.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

****

*** RUN INFORMATION PAGE ***

INPUT FILENAME IS: an_18sul.dta
OUTPUT FILENAME IS: an_18sul.lst
RUN TITLE1 IS: ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.98 lb/mmBtu
2042 G/SEC EMISS. RATE; 3,24 hr CON. @ FULL LOAD
COMPUTER ID NAME (VOLUME): no label

BEGINNING HOUR,MINUTE,SECOND ------- : 11:22:22
BEGINNING MONTH,DAY,YEAR --------- : 09/01/98

ENDING HOUR,MINUTE,SECOND -------- : 11:22:45
ENDING MONTH,DAY,YEAR ---------- : 09/01/98

TOTAL CPU SECONDS ----------: 23.

****

Anclote SO_2
Low load (80 MW)

```
CO STARTING
CO TITLEONE ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.98 lb/mmBtu
CO TITLETWO  392 G/SEC EMISS. RATE; 3,24 hr CON. @ 80 MW
CO MODELOPT DFAULT CONC   RURAL
CO AVERTIME 3 24
CO POLLUTID SO2
CO DCAYCOEF   .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED


SO STARTING
** Source Location Cards:
**       SRCID SRCTYP      XS         YS         ZS

SO LOCATION    1 POINT       0.0000      0.0000      .0000

** Source Parameter Cards:
** POINT:  SRCID      QS          HS       TS       VS       DS

SO SRCPARAM    1      392.0       152.100  349.0000    8.6000    7.6000

SO EMISUNIT   .100000E+07 (GRAMS/SEC)        (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED


RE STARTING
RE GRIDCART CAR1 STA
RE        CAR1 XYINC -3000. 16 400.  -3000. 16 400.
RE        CAR1 END
RE FINISHED


ME STARTING
ME INPUTFIL tpaprl86.bin                    UNFORM
ME ANEMHGHT   6.700 METERS
ME SURFDATA  12842  1986          SURFNAME
ME UAIRDATA  12842  1986          UAIRNAME
ME WINDCATS   1.54   3.09   5.14   8.23   10.80
ME FINISHED


OU STARTING
OU RECTABLE ALLAVE FIRST  SECOND
OU FINISHED

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**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 2 Short Term Average(s) of: 3-HR 24-HR

**This Run Includes: 1 Source(s); 1 Source Group(s); and 256 Receptor(s)

**The Model Assumes A Pollutant Type of: SO2

**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) = 6.70 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: an80mw.dta ; **Output Print File: an80mw.lst
**Detailed Error/Message File: ERRORS.OUT

**MODELOPTs: 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
1	0	0.39200E+03	0.0	0.0	0.0	152.10	349.00	8.60	7.60	NO	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

**MODELOPTs: CONC RURAL FLAT DFAULT

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

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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

**MODELOPTs: CONC RURAL FLAT DFAULT

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

FILE: tpaprl86.bin FORMAT: UNFORM
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: SURFNAME NAME: UAIRNAME
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	USTAR	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	18	47.0	1.00	293.2	5	419.0	418.0	0.0000	0.0	0.0000	0	0.00
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0	0.0000	0.0	0.0000	0	0.00
86	1	1	20	127.0	1.00	290.9	6	437.0	430.0	0.0000	0.0	0.0000	0	0.00
86	1	1	21	130.0	1.00	290.9	6	447.0	435.0	0.0000	0.0	0.0000	0	0.00
86	1	1	22	132.0	1.00	289.8	6	456.0	441.0	0.0000	0.0	0.0000	0	0.00
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0	0.0000	0.0	0.0000	0	0.00
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0	0.0000	0.0	0.0000	0	0.00

*** 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.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	88.02937 (86031815)	85.55343 (86081212)	87.10784 (86081212)	72.36352 (86050809)	68.31754 (86100812)
2600.0	91.68445 (86031815)	96.17520 (86031815)	88.03341 (86081212)	84.02258 (86080309)	74.95975 (86052812)
2200.0	104.90434 (86052618)	93.20673 (86031815)	100.08215 (86031815)	81.83091 (86081212)	85.17562 (86080309)
1800.0	97.76260 (86051412)	106.73298 (86052618)	105.14330 (86100912)	100.56495 (86100912)	84.76771 (86082112)
1400.0	85.59409 (86070512)	100.59681 (86070512)	117.16745 (86092915)	115.02197 (86100912)	100.05173 (86100912)
1000.0	87.75004 (86111112)	79.85487 (86111112)	85.08528 (86052712)	114.93993 (86092915)	114.91465 (86092915)
600.0	96.69730 (86111112)	108.18277 (86111112)	110.43152 (86111112)	94.35388 (86111112)	90.29246 (86082615)
200.0	111.74450 (86052312)	110.62268 (86052312)	100.40945 (86052312)	91.95174 (86041415)	71.46951 (86041415)
-200.0	89.19302c(86062515)	93.29806c(86062515)	99.41036 (86070715)	101.17448 (86070715)	81.14544c(86062515)
-600.0	114.51175 (86091712)	136.06207 (86091712)	148.07147 (86091712)	129.97583 (86091712)	70.96021 (86092515)
-1000.0	104.04791 (86091712)	94.02113 (86091712)	90.27793 (86020315)	88.31522 (86041915)	90.49607 (86091915)
-1400.0	76.45273 (86060512)	79.86880 (86101912)	92.71378 (86091915)	103.27357 (86091915)	75.95878 (86091915)
-1800.0	83.87751 (86033112)	93.33636 (86091915)	90.37272 (86091915)	74.56094 (86041012)	81.68555 (86062612)
-2200.0	81.53004 (86091915)	77.10786 (86101915)	73.65336 (86041012)	76.51994 (86062612)	71.32325 (86062612)
-2600.0	66.75067 (86060409)	70.86172 (86021312)	73.65905 (86021312)	70.45406 (86102015)	77.43114 (86011212)
-3000.0	73.05430 (86021312)	81.61673 (86021312)	67.62200 (86102015)	88.99107 (86011212)	77.76788 (86041812)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	73.11144 (86071312)	72.26128 (86111615)	87.96198 (86010112)	106.83707 (86063012)	102.43386 (86063012)
2600.0	76.67404 (86100812)	85.01835 (86111615)	93.30520 (86091115)	126.18809 (86063012)	103.86216 (86063012)
2200.0	87.67355 (86052812)	91.33905 (86111615)	100.72962 (86091115)	143.01347 (86063012)	98.43011 (86041212)
1800.0	96.58321 (86052812)	79.34509 (86111615)	96.71762 (86050615)	145.02605 (86063012)	91.09353 (86062912)
1400.0	76.50755 (86082112)	79.62123 (86052812)	81.80770 (86052312)	109.30686 (86063012)	79.08663 (86072112)
1000.0	63.62485 (86082515)	75.26376 (86061112)	94.53123 (86052312)	93.86962 (86083015)	134.06667c(86090115)
600.0	103.11280 (86082615)	94.69741 (86062215)	37.61928 (86092312)	42.26799 (86073112)	151.68607c(86090115)
200.0	143.64934 (86082615)	68.04481 (86082615)	0.00000 (86062215)	0.00000 (86090715)	74.15588 (86071612)
-200.0	90.98920 (86090415)	39.57167 (86090112)	0.00000 (86062715)	0.00000 (86061112)	37.72519 (86080112)
-600.0	84.02576 (86082512)	98.13025 (86062715)	25.44493 (86052215)	25.14368 (86062615)	71.73603c(86071415)
-1000.0	75.02338 (86062812)	85.02631 (86052912)	85.39164 (86041812)	86.11365 (86062615)	80.71638 (86061112)
-1400.0	76.77436 (86042312)	74.45908 (86042612)	76.72935 (86041812)	47.32512 (86062615)	68.82150 (86062615)
-1800.0	72.32396 (86062612)	89.52167 (86112112)	64.99419 (86082412)	58.10316 (86082412)	72.40218 (86062615)
-2200.0	79.50432 (86041812)	97.64352 (86112112)	85.37411 (86101612)	69.52032 (86082412)	65.68253 (86062615)
-2600.0	88.10303 (86112112)	87.88236 (86112112)	105.71348 (86101612)	73.18836 (86082412)	60.14122 (86062615)
-3000.0	93.12638 (86112112)	114.94715 (86101612)	113.49215 (86101612)	72.71027 (86082412)	59.66016 (86021215)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	81.10293 (86041212)	74.37812 (86071412)	81.26978 (86071412)	95.33469 (86061912)	82.78569 (86061912)
2600.0	83.13278 (86082815)	85.09542 (86071412)	92.15762 (86061912)	91.40939 (86061912)	63.06195 (86061912)
2200.0	84.57306 (86080215)	80.95081 (86071412)	94.82510 (86061912)	75.60651 (86022215)	96.37149 (86010415)
1800.0	78.65194 (86082812)	83.17429 (86061912)	90.05607 (86022215)	103.89252 (86010415)	104.94714 (86010415)
1400.0	71.91320 (86072112)	95.03010 (86022215)	99.83115 (86080715)	105.85009 (86040712)	116.30133 (86091212)
1000.0	83.64071c(86090115)	91.28147 (86080715)	113.84945 (86091212)	114.58396 (86091212)	101.89375 (86042515)
600.0	121.69590 (86071612)	86.97866 (86071812)	99.66616 (86042515)	114.22446 (86100315)	118.59280 (86100315)
200.0	164.05215 (86071812)	108.01242 (86053015)	133.46696 (86053015)	131.03273 (86100515)	118.93616 (86100515)
-200.0	153.82086 (86080112)	130.98479 (86080112)	111.28410 (86080112)	103.16149 (86061515)	111.47919 (86081515)
-600.0	54.24722 (86051115)	58.41021 (86081712)	71.62820 (86081712)	76.93933 (86042815)	82.89915 (86072015)
-1000.0	64.19527 (86042212)	48.62638 (86042212)	67.78696 (86081712)	78.43514 (86081712)	89.96288 (86112215)
-1400.0	79.65589 (86042912)	82.68617 (86042212)	62.80519 (86090315)	67.05218 (86081712)	73.75739 (86081712)
-1800.0	87.92327 (86042912)	77.91092 (86042912)	73.98096 (86042212)	69.71952 (86090315)	70.06365 (86042215)
-2200.0	73.21513 (86062615)	91.12466 (86042912)	89.62542 (86101615)	62.86565 (86090315)	65.37222 (86090315)
-2600.0	71.26316 (86062615)	72.85388 (86042912)	100.44958 (86101615)	91.00700 (86101615)	58.43884 (86041315)
-3000.0	63.30623 (86062615)	59.96781 (86062615)	85.25043 (86101615)	104.63621 (86101615)	83.25121 (86101615)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	61.86742 (86030415)
2600.0	85.62195 (86010415)
2200.0	103.26312 (86010415)
1800.0	97.52923 (86091212)
1400.0	106.52212 (86091212)
1000.0	102.58506 (86061212)
600.0	110.57987 (86100315)
200.0	102.78530 (86100515)
-200.0	111.08459 (86081515)
-600.0	83.98849 (86081715)
-1000.0	88.79011 (86071118)
-1400.0	78.02898 (86112215)
-1800.0	70.57676 (86081712)
-2200.0	70.56036 (86081712)
-2600.0	65.95863 (86042318)
-3000.0	54.29189 (86072315)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	67.14139 (86083112)	65.90266 (86112515)	74.14379 (86080309)	68.86838 (86080309)	63.82162 (86052812)
2600.0	79.03364 (86031212)	73.54372 (86100912)	71.12177 (86092912)	77.71458 (86082112)	71.85218 (86050809)
2200.0	88.06074 (86031212)	91.11649 (86031212)	87.52331 (86100912)	79.90530 (86092912)	82.19159 (86082112)
1800.0	89.62827 (86070512)	96.88734 (86092915)	102.53515 (86031212)	93.13734 (86031815)	81.37927 (86080309)
1400.0	78.43108 (86082615)	100.31094 (86051412)	109.93201 (86051412)	114.04768 (86092915)	83.58496 (86110512)
1000.0	80.64706 (86111115)	78.72736 (86111115)	84.98302 (86092915)	107.29775 (86051412)	95.67111 (86100912)
600.0	76.62911 (86091812)	86.05949 (86111115)	98.32230 (86111115)	91.80637 (86070712)	72.02091 (86052712)
200.0	73.62405 (86040418)	81.00589 (86041415)	90.24560 (86041415)	76.82368 (86052312)	66.78967c(86062515)
-200.0	79.77210 (86081012)	87.66836 (86070715)	93.75596c(86062515)	90.19321 (86091712)	77.09542 (86070715)
-600.0	82.04836 (86070715)	88.87534 (86070715)	88.81671 (86090412)	95.33714 (86092515)	67.27505 (86091712)
-1000.0	80.69241 (86091715)	92.68064 (86092515)	89.86160 (86092515)	70.49949 (86110412)	74.08048 (86041915)
-1400.0	71.97075 (86101912)	78.34431 (86033112)	84.70971 (86041915)	87.20466 (86101915)	67.15241 (86041012)
-1800.0	80.62759 (86101912)	74.34711 (86033112)	87.68853 (86101915)	73.28098 (86101915)	71.98708 (86042312)
-2200.0	65.47777 (86101915)	72.91316 (86091915)	67.89028 (86062612)	67.25702 (86041012)	69.94727 (86042312)
-2600.0	64.74389 (86101915)	69.45145 (86041012)	71.86763 (86120412)	63.80850 (86062612)	62.32516 (86041812)
-3000.0	68.62370 (86120412)	80.79734 (86120412)	55.88297 (86062612)	53.21698 (86102015)	65.10577 (86011212)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	65.20769 (86100812)	66.06250 (86071312)	82.02678 (86091115)	87.74729 (86080412)	79.29879 (86111712)
2600.0	69.35143 (86071312)	75.25694 (86071312)	87.01511 (86010112)	93.28962 (86080412)	90.75419 (86041212)
2200.0	81.46506 (86100812)	80.59676 (86071312)	89.09188 (86050615)	96.09090 (86080312)	91.91168 (86063012)
1800.0	84.68565 (86051215)	74.60143 (86071312)	95.63360 (86091115)	99.41370 (86080312)	89.10596 (86080215)
1400.0	65.48022 (86051215)	67.65818c(86080512)	81.69111 (86050615)	78.14789 (86080312)	71.77956 (86080215)
1000.0	61.42954 (86100912)	69.88437 (86082612)	94.10995 (86092312)	87.35198c(86072215)	87.39721 (86072112)
600.0	81.07081 (86082515)	71.34789 (86062712)	25.29802c(86080512)	38.24018 (86062815)	95.40434 (86090715)
200.0	92.24090 (86081015)	40.44862 (86052912)	0.00000 (86062712)	0.00000 (86090712)	64.26782 (86080712)
-200.0	86.26406 (86083012)	36.99919 (86043012)	0.00000 (86082315)	0.00000c(86071415)	33.68999 (86062012)
-600.0	80.12312 (86062315)	96.90710 (86082312)	17.24208 (86090812)	9.03662 (86061112)	63.88504 (86061112)
-1000.0	67.32346 (86062715)	83.46861 (86042612)	80.55795 (86052415)	49.97946 (86060112)	69.19010c(86071415)
-1400.0	70.60580 (86062612)	60.11376 (86041812)	61.47467 (86052415)	41.27287 (86052415)	43.86383 (86061112)
-1800.0	70.20547 (86042312)	74.85782 (86041812)	63.71751 (86041812)	56.77363 (86021215)	48.54012c(86072215)
-2200.0	67.10035 (86112112)	68.65348 (86041812)	76.32996 (86082412)	66.81918 (86021215)	53.12957 (86042212)
-2600.0	81.64258 (86041812)	87.40304 (86101612)	80.05809 (86082412)	68.79939 (86111512)	57.90883 (86021215)
-3000.0	70.22007 (86041812)	73.11599 (86112112)	85.22582 (86011115)	71.38086 (86111512)	57.81222 (86062615)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	75.00600 (86111712)	67.05642 (86080218)	69.74362 (86061912)	73.68807 (86020415)	64.00695 (86020415)
2600.0	81.59052 (86080215)	67.22128 (86080218)	69.55951 (86071412)	67.05596 (86020415)	62.61712 (86030415)
2200.0	83.83469 (86082815)	74.70776 (86061912)	70.09595 (86022215)	68.51273 (86061912)	72.21894 (86080715)
1800.0	75.12579 (86072112)	76.18152 (86092415)	79.48873 (86080715)	88.04529 (86080715)	84.49918 (86040712)
1400.0	71.88125c(86090115)	83.44899 (86080715)	97.09330 (86010415)	102.72070 (86091212)	99.49813 (86040712)
1000.0	74.29554 (86090712)	81.02672 (86042015)	111.27584 (86040712)	101.50482 (86082715)	94.05271 (86061212)
600.0	88.50912 (86061412)	84.08132 (86071515)	96.72366 (86060615)	103.53310c(86062512)	110.28818c(86062512)
200.0	148.22191 (86080712)	105.54178 (86071812)	127.42640 (86100515)	126.01431 (86053015)	108.31142 (86053015)
-200.0	138.99335 (86071315)	94.02654 (86071315)	102.87952 (86061515)	101.20205 (86081515)	96.26305 (86072012)
-600.0	45.82458 (86062012)	55.43381 (86072412)	68.92646 (86042815)	75.27124 (86072015)	76.49998 (86042815)
-1000.0	59.62333c(86071415)	46.64244 (86073115)	60.34032 (86072009)	77.55117 (86112215)	72.99507 (86081712)
-1400.0	70.28253 (86061815)	66.57652 (86052212)	58.55026 (86042212)	61.72469 (86042215)	68.18159 (86061318)
-1800.0	74.76004 (86061815)	77.08718 (86052212)	68.39152 (86090315)	54.40973 (86042212)	68.70269 (86081712)
-2200.0	59.34349 (86111515)	78.18968 (86101615)	70.58414 (86052212)	61.98854 (86042212)	63.36827 (86042318)
-2600.0	54.26743 (86122915)	67.37316 (86101615)	75.97884 (86042912)	64.19638 (86011312)	54.34553 (86090315)
-3000.0	53.47513 (86122915)	56.51530 (86111515)	70.18735 (86042912)	64.61642 (86011312)	63.24208 (86011312)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 3-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	56.57210 (86061912)
2600.0	63.58550 (86010315)
2200.0	69.33188 (86090618)
1800.0	85.52252 (86040712)
1400.0	89.86774 (86100415)
1000.0	94.22938 (86042515)
600.0	105.37576c(86062512)
200.0	98.72584 (86060618)
-200.0	96.41104 (86060718)
-600.0	78.26224 (86072015)
-1000.0	85.10342 (86112215)
-1400.0	77.56660 (86061318)
-1800.0	55.06812 (86042215)
-2200.0	63.71603 (86042215)
-2600.0	57.15026 (86090315)
-3000.0	53.68755 (86041315)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	14.00852 (86112424)	13.15564c(86082124)	15.18809c(86112524)	14.70387 (86052824)	14.93176 (86052824)
2600.0	21.84759 (86112424)	14.94242c(86100924)	13.91653c(86082124)	14.30717c(86112524)	17.92986 (86052824)
2200.0	21.02174 (86112424)	22.32943 (86112424)	16.23893c(86100924)	14.21219c(86082124)	16.11067 (86052824)
1800.0	21.61628c(86082624)	21.77496c(86101324)	21.15809c(86101324)	16.91410c(86100924)	13.76815c(86040324)
1400.0	25.40342c(86082624)	26.14355c(86082624)	22.20857c(86070824)	20.46282c(86101324)	15.43120c(86100924)
1000.0	22.54465 (86111124)	22.00684c(86080824)	25.53399c(86082624)	24.24693c(86080824)	18.65297c(86070824)
600.0	24.52221 (86111124)	27.20330 (86111124)	27.72635 (86111124)	23.68944 (86111124)	20.31365c(86082624)
200.0	25.28017c(86070724)	27.44297c(86070724)	28.19497c(86070724)	25.45411c(86070724)	16.79620c(86070724)
-200.0	27.51751c(86070724)	30.33065c(86070724)	31.82561c(86070724)	29.55360c(86070724)	20.14020c(86070724)
-600.0	23.59275c(86070724)	26.58546 (86091724)	28.78067 (86091724)	25.37672 (86091724)	15.95589c(86082324)
-1000.0	26.22643 (86091724)	24.50206 (86091724)	19.10836c(86092824)	19.11254c(86082324)	18.96627c(86082324)
-1400.0	19.49354c(86092824)	18.97319 (86033024)	19.52775c(86092124)	16.29029 (86091924)	15.72136c(86102024)
-1800.0	20.09904 (86101924)	19.43292 (86101924)	16.30291 (86091924)	18.67179c(86102024)	19.37115c(86102024)
-2200.0	17.31513c(86092124)	15.85020c(86102024)	18.90519c(86102024)	21.37665c(86102024)	17.79028c(86102024)
-2600.0	15.87600c(86102024)	18.01641c(86102024)	20.35624c(86102024)	20.83667c(86102024)	15.41162c(86011224)
-3000.0	16.69818c(86102024)	18.38831c(86102024)	20.28019c(86102024)	16.65549c(86102024)	13.46510 (86112124)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	13.28925c(86071324)	13.91923 (86050624)	14.33661c(86072524)	17.19296c(86072524)	15.43281c(86041224)
2600.0	13.94767c(86100824)	15.72744 (86050624)	15.76766c(86091124)	16.75769c(86063024)	20.63672c(86080224)
2200.0	17.79838 (86052824)	16.57119 (86050624)	17.66587c(86091124)	19.03654c(86063024)	26.97998c(86080224)
1800.0	20.03280 (86052824)	14.90855 (86050624)	19.34410 (86050624)	19.35587c(86063024)	31.12944c(86080224)
1400.0	12.58628c(86040324)	14.75219 (86052824)	16.85562 (86050624)	14.64189c(86063024)	25.23431c(86080224)
1000.0	10.64269c(86082524)	12.54396c(86061124)	15.49172c(86071324)	16.54980 (86080624)	22.34444c(86090124)
600.0	23.96483c(86070824)	12.35184c(86062224)	4.91118c(86092324)	6.37343c(86082724)	31.57224c(86090724)
200.0	24.18253c(86082624)	11.34403c(86082624)	0.00000c(86062224)	0.00000c(86090724)	14.34219c(86080724)
-200.0	16.31598c(86090424)	6.59528c(86090124)	0.00000c(86082324)	0.00000c(86061124)	6.28830c(86080124)
-600.0	19.70986c(86062324)	32.20031c(86082324)	4.24082c(86052224)	4.19061c(86062624)	11.95601c(86071424)
-1000.0	20.30245c(86082324)	13.85519 (86052924)	14.23194c(86041824)	14.35278c(86062624)	13.60458c(86061124)
-1400.0	15.94814c(86042324)	10.89436 (86112124)	12.78823c(86041824)	7.89446c(86062624)	11.47025c(86062624)
-1800.0	15.73207c(86042324)	17.00932 (86112124)	13.15706c(86032824)	9.68652c(86082424)	12.06703c(86062624)
-2200.0	16.04321 (86112124)	17.77579 (86112124)	13.01264c(86032824)	12.11686c(86021324)	10.94712c(86062624)
-2600.0	18.08203 (86112124)	15.56348 (86112124)	13.73729 (86101624)	13.29014c(86021324)	11.48625c(86061024)
-3000.0	17.72349 (86112124)	14.46017 (86101624)	14.78915 (86101624)	13.51892c(86021324)	12.19398c(86021324)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	25.62769c(86080224)	28.49075c(86080224)	20.78757c(86080224)	14.42432c(86022224)	16.97812c(86071824)
2600.0	31.37371c(86080224)	27.91422c(86080224)	15.56386c(86101424)	17.48161c(86071824)	17.87183c(86071824)
2200.0	34.04689c(86080224)	20.60322c(86080224)	16.52923c(86071824)	18.86359c(86071824)	16.40749 (86010424)
1800.0	27.70114c(86080224)	15.06321c(86022224)	18.44568c(86071824)	17.89468c(86090724)	17.86745c(86040724)
1400.0	14.73976 (86072124)	18.88660c(86090724)	19.73631c(86090724)	22.16513c(86040724)	25.37548c(86100424)
1000.0	20.60583c(86090724)	19.32572c(86090724)	22.77890c(86040724)	28.98624c(86100424)	28.11641c(86100424)
600.0	27.79856c(86071624)	24.89673c(86071624)	27.53158c(86042524)	28.08262c(86042524)	24.52465c(86062024)
200.0	29.37031c(86080724)	23.79345c(86081824)	31.94496c(86100524)	35.65870c(86100524)	34.42558c(86100524)
-200.0	26.26233c(86080124)	25.06797c(86080124)	24.96637 (86072024)	30.21849c(86081524)	33.59402c(86081524)
-600.0	7.57949c(86072424)	12.79631c(86072424)	19.79895c(86050924)	24.78569c(86050924)	26.20745c(86050924)
-1000.0	12.65903c(86052224)	11.24080 (86042224)	12.91673c(86082424)	13.01717c(86050924)	19.09992c(86050924)
-1400.0	16.02618c(86052224)	20.85725c(86052224)	14.87108 (86042224)	14.93504 (86042224)	12.68702c(86082424)
-1800.0	14.65755c(86042924)	21.94219c(86052224)	21.65081c(86052224)	16.72312c(86052224)	16.07457 (86042224)
-2200.0	12.20252c(86062624)	16.04308c(86052224)	21.91552c(86052224)	19.56198c(86052224)	16.08840c(86052224)
-2600.0	11.87719c(86062624)	12.16664c(86042924)	18.05250c(86052224)	19.62819c(86052224)	16.90203c(86052224)
-3000.0	10.55104c(86062624)	9.99463c(86062624)	12.43081c(86090324)	17.66233c(86052224)	16.94483c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	16.37229c(86071824)
2600.0	15.36166 (86010424)
2200.0	16.47262 (86010424)
1800.0	20.25748c(86100424)
1400.0	26.14865c(86100424)
1000.0	26.26897c(86042524)
600.0	22.26114c(86062024)
200.0	31.17726c(86100524)
-200.0	34.62524c(86081524)
-600.0	25.70846c(86050924)
-1000.0	22.66786c(86050924)
-1400.0	13.68172c(86030524)
-1800.0	13.13032 (86042224)
-2200.0	14.62665 (86042224)
-2600.0	14.79524c(86041324)
-3000.0	14.98258c(86041324)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	13.58847c(86100924)	12.10409c(86112524)	11.94209c(86080324)	14.09010c(86112524)	14.77038c(86100824)
2600.0	17.27109c(86101324)	14.55983 (86112424)	12.42922c(86112524)	12.49642c(86080324)	13.38360c(86100824)
2200.0	20.13769c(86101324)	19.54980c(86101324)	15.55884c(86101324)	12.39692 (86092924)	13.42139c(86040324)
1800.0	19.44946c(86070824)	19.54025c(86070824)	20.49073 (86112424)	15.75003c(86101324)	13.48274c(86082124)
1400.0	21.32012c(86080824)	22.14851c(86080824)	22.06593c(86101324)	18.78385 (86092924)	15.26694 (86092924)
1000.0	18.65880 (86052724)	21.75770c(86082624)	25.23767c(86080824)	22.24624c(86082624)	16.99268c(86080824)
600.0	22.37821c(86070724)	23.37805c(86070724)	22.77606c(86070724)	19.30121c(86070724)	19.40364c(86080824)
200.0	22.77148c(86040424)	22.25418c(86040424)	19.75459c(86040424)	15.46527c(86041424)	11.93686c(86041424)
-200.0	22.54276c(86082324)	21.67476c(86082324)	19.91752c(86082324)	17.93333 (86091724)	15.61056c(86090424)
-600.0	22.52288 (86091724)	24.82106c(86070724)	24.02914c(86070724)	19.32274 (86091524)	13.88507 (86091724)
-1000.0	22.46096 (86091524)	21.89102 (86091524)	19.10538c(86082324)	15.50653c(86092124)	14.34251c(86062324)
-1400.0	18.80534 (86033024)	18.67936c(86033124)	19.01239 (86101924)	15.94921c(86082324)	15.50430c(86082324)
-1800.0	19.55855c(86092124)	19.27257c(86092124)	15.25185 (86101924)	15.64971 (86032924)	14.57100c(86042324)
-2200.0	17.20544 (86101924)	15.47113 (86032924)	16.49674 (86032924)	15.60175 (86032924)	15.26045c(86042324)
-2600.0	14.81841 (86032924)	15.81007 (86032924)	15.91767 (86032924)	12.71644 (86102124)	14.24039c(86032824)
-3000.0	14.50714 (86032924)	15.14551 (86032924)	13.49965 (86032924)	15.87864c(86011224)	12.99934c(86011224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	11.50922c(86100824)	12.04355c(86111624)	13.52639c(86091124)	14.16051c(86063024)	15.27399c(86063024)
2600.0	12.94189c(86071324)	14.16973c(86111624)	14.58669 (86050624)	16.02599c(86072524)	16.47081c(86041224)
2200.0	14.63238c(86100824)	15.22318c(86111624)	17.47949 (86050624)	13.87549c(86072524)	17.45020c(86082824)
1800.0	14.10579c(86051224)	14.43068c(86051224)	17.85030c(86091124)	13.55676c(86080324)	21.58333c(86082824)
1400.0	12.32682 (86052824)	11.93032c(86051224)	13.78832c(86091124)	10.65779c(86080324)	19.50122c(86082824)
1000.0	9.73477 (86081024)	11.71853c(86082624)	15.46244c(86082224)	16.32878c(86061424)	13.83236c(86072524)
600.0	19.14306c(86082624)	11.72562c(86070824)	3.56490c(86082624)	5.73810c(86062824)	25.28101c(86090124)
200.0	19.21993c(86082524)	5.08446c(86082524)	0.00000c(86062724)	0.00000c(86080124)	12.52169c(86071624)
-200.0	14.33658c(86082224)	6.16653c(86043024)	0.00000c(86062724)	0.00000c(86071424)	4.81304c(86062024)
-600.0	19.07683c(86082324)	17.35106c(86062324)	2.24897c(86090824)	1.50611c(86061124)	10.64812c(86061124)
-1000.0	16.07011c(86062324)	11.92409c(86042624)	10.98518c(86052424)	6.61425c(86052424)	11.53168c(86071424)
-1400.0	12.85935 (86052924)	10.72799 (86052924)	9.79602c(86032824)	6.49822c(86052224)	7.56788c(86061124)
-1800.0	13.03860c(86032824)	12.47630c(86041824)	10.83387c(86082424)	9.52016c(86021324)	7.00041c(86072224)
-2200.0	13.25072c(86041824)	13.38279c(86032824)	12.72447c(86082424)	11.59160c(86082424)	9.43375c(86061024)
-2600.0	13.60710c(86041824)	13.10836c(86032824)	13.34791c(86082424)	12.20634c(86082424)	10.39231c(86021324)
-3000.0	11.70334c(86041824)	12.64727 (86112124)	13.26844c(86082424)	12.13158c(86082424)	11.92226c(86061024)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	17.80337c(86082824)	19.61286c(86082824)	14.62906c(86082824)	13.61924c(86061924)	11.82654c(86061924)
2600.0	22.48887c(86082824)	20.19110c(86082824)	15.18437c(86022224)	13.33088c(86022224)	12.59638c(86090724)
2200.0	25.50299c(86082824)	17.70812c(86082824)	15.15691c(86022224)	14.52160c(86090724)	15.64269c(86090724)
1800.0	23.32600c(86082824)	14.74709 (86072124)	16.79923c(86090724)	16.58235 (86010424)	15.61646 (86010424)
1400.0	14.02728c(86082824)	15.31105c(86022224)	18.21130c(86040724)	18.46531c(86100424)	20.91043c(86091224)
1000.0	13.94012c(86090124)	18.94282c(86040724)	21.90644c(86100424)	24.42258c(86082724)	26.96297c(86042524)
600.0	18.24208c(86080724)	23.09762c(86071524)	26.69450c(86071524)	24.92356c(86062024)	24.19927c(86042524)
200.0	24.94565c(86071824)	20.74923c(86080124)	31.88886c(86081824)	33.03705c(86081824)	31.33744c(86081824)
-200.0	23.16987c(86071324)	18.69660 (86072024)	24.27143c(86080124)	26.05044 (86072024)	27.66878c(86060724)
-600.0	7.15033c(86051124)	10.52548c(86050924)	16.40184c(86072424)	20.02719 (86072024)	21.71838 (86072024)
-1000.0	11.42722c(86071924)	10.98566c(86082424)	9.84005c(86041124)	12.95991c(86030524)	15.33907c(86081724)
-1400.0	14.26367c(86090324)	17.04668c(86071924)	14.83912c(86052224)	14.65849c(86082424)	12.59727c(86041124)
-1800.0	11.48513c(86090324)	17.45662c(86090324)	17.88674c(86071924)	15.08120c(86082424)	14.85006c(86082424)
-2200.0	9.74074c(86042924)	15.73847c(86090324)	16.37381c(86090324)	17.17869c(86071924)	14.41195c(86041324)
-2600.0	7.86836 (86111524)	10.18720c(86090324)	16.12159c(86090324)	15.89092c(86071924)	15.92540c(86071924)
-3000.0	7.96938 (86111524)	8.94984c(86072324)	11.95167c(86052224)	14.48397c(86090324)	14.92299c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	11.99699 (86030424)
2600.0	14.23068c(86071824)
2200.0	13.64709c(86040724)
1800.0	17.06118c(86040724)
1400.0	20.60426c(86091224)
1000.0	24.01936c(86100424)
600.0	21.30615c(86100524)
200.0	28.96999c(86060624)
-200.0	27.82104c(86060724)
-600.0	22.51877c(86081724)
-1000.0	18.88589c(86081724)
-1400.0	12.87461c(86041124)
-1800.0	12.01612c(86082424)
-2200.0	14.31398c(86082424)
-2600.0	14.50892c(86052224)
-3000.0	14.48297c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 3-HR RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	164.05215	ON 86071812: AT (1000.00, 200.00, 0.00, 0.00)	GC	CAR1
	HIGH 2ND HIGH VALUE IS	148.22191	ON 86080712: AT (1000.00, 200.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	35.65870c	ON 86100524: AT (2200.00, 200.00, 0.00, 0.00)	GC	CAR1
	HIGH 2ND HIGH VALUE IS	33.03705c	ON 86081824: AT (2200.00, 200.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

****

*** RUN INFORMATION PAGE ***

INPUT FILENAME IS: an80mw.dta
OUTPUT FILENAME IS: an80mw.lst
RUN TITLE1 IS: ANCLOTE SO2 EMISSIONS; UNITS 1-2 @ 1.98 lb/mmBtu
392 G/SEC EMISS. RATE; 3,24 hr CON. @ 80 MW
COMPUTER ID NAME (VOLUME): no label

BEGINNING HOUR,MINUTE,SECOND ------- : 15:26:36
BEGINNING MONTH,DAY,YEAR ---------- : 09/01/98

ENDING HOUR,MINUTE,SECOND --------- : 15:27:00
ENDING MONTH,DAY,YEAR ---------- : 09/01/98

TOTAL CPU SECONDS ---------- : 24.

****

Anclote TSP

```
CO STARTING
CO TITLEONE ANCLOTE TSP EMISSIONS; UNITS 1-2 @ 0.10 lb/mmBtu
CO TITLETWO 124 G/SEC EMISS. RATE; ANN. 24 h con, FULL LOAD
CO MODELOPT DFAULT CONC   RURAL
CO AVERTIME 24 PERIOD
CO POLLUTID TSP
CO DCAYCOEF   .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED


SO STARTING
** Source Location Cards:
**       SRCID SRCTYP      XS         YS         ZS

SO LOCATION    1 POINT       0.0000      0.0000       .0000

** Source Parameter Cards:
** POINT:  SRCID     QS         HS       TS       VS       DS

SO SRCPARAM    1      123.8       152.100  430.0000   35.1000    7.6000

SO EMISUNIT   .100000E+07 (GRAMS/SEC)        (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED


RE STARTING
RE GRIDCART CAR1 STA
RE        CAR1 XYINC -3000. 16 400.  -3000. 16 400.
RE        CAR1 END
RE FINISHED


ME STARTING
ME INPUTFIL tpaprl86.bin                    UNFORM
ME ANEMHGHT   6.700 METERS
ME SURFDATA  12842  1986          SURFNAME
ME UAIRDATA  12842  1986          UAIRNAME
ME WINDCATS   1.54   3.09   5.14   8.23   10.80
ME FINISHED


OU STARTING
OU RECTABLE ALLAVE FIRST  SECOND
OU FINISHED

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**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
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 256 Receptor(s)

**The Model Assumes A Pollutant Type of: TSP

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

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
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) = 6.70 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: anctsp.dta ; **Output Print File: anctsp.lst
**Detailed Error/Message File: ERRORS.OUT

**MODELOPTs: 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
1	0	0.12380E+03	0.0	0.0	0.0	152.10	430.00	35.10	7.60	NO	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

**MODELOPTs: 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
```

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

**MODELOPTs: CONC RURAL FLAT DFAULT

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

FILE: tpapril86.bin FORMAT: UNFORM
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: SURFNAME NAME: UAIRNAME
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	USTAR	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	18	47.0	1.00	293.2	5	419.0	418.0	0.0000	0.0	0.0000	0	0.00
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0	0.0000	0.0	0.0000	0	0.00
86	1	1	20	127.0	1.00	290.9	6	437.0	430.0	0.0000	0.0	0.0000	0	0.00
86	1	1	21	130.0	1.00	290.9	6	447.0	435.0	0.0000	0.0	0.0000	0	0.00
86	1	1	22	132.0	1.00	289.8	6	456.0	441.0	0.0000	0.0	0.0000	0	0.00
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0	0.0000	0.0	0.0000	0	0.00
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0	0.0000	0.0	0.0000	0	0.00

*** 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.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS)								
	-3000.00	-2600.00	-2200.00	-1800.00	-1400.00	-1000.00	-600.00	-200.00	200.00
3000.00	0.05665	0.04278	0.03231	0.02670	0.02467	0.02540	0.02884	0.03388	0.03949
2600.00	0.06388	0.04944	0.03510	0.02529	0.02087	0.02056	0.02405	0.03015	0.03657
2200.00	0.06714	0.05505	0.03995	0.02610	0.01786	0.01560	0.01886	0.02633	0.03399
1800.00	0.06683	0.05700	0.04424	0.02966	0.01745	0.01050	0.01213	0.02206	0.03216
1400.00	0.06399	0.05595	0.04596	0.03414	0.01921	0.00873	0.00713	0.01839	0.03109
1000.00	0.05980	0.05263	0.04528	0.03572	0.02571	0.01302	0.00259	0.00385	0.00899
600.00	0.05688	0.04920	0.04254	0.03521	0.03142	0.01452	0.00028	0.00000	0.00000
200.00	0.05655	0.04785	0.04012	0.03250	0.02797	0.00685	0.00000	0.00000	0.00000
-200.00	0.05709	0.04809	0.03987	0.03165	0.02700	0.00675	0.00000	0.00000	0.00000
-600.00	0.05587	0.04727	0.03924	0.03000	0.02465	0.01046	0.00028	0.00000	0.00000
-1000.00	0.05581	0.04677	0.03742	0.02685	0.01872	0.01234	0.00575	0.00067	0.00059
-1400.00	0.05495	0.04478	0.03463	0.02593	0.01748	0.01254	0.00778	0.00281	0.00326
-1800.00	0.05209	0.04242	0.03369	0.02636	0.01986	0.01278	0.00685	0.00342	0.00390
-2200.00	0.04950	0.04183	0.03457	0.02746	0.02028	0.01301	0.00758	0.00511	0.00568
-2600.00	0.04848	0.04194	0.03490	0.02753	0.01970	0.01262	0.00845	0.00686	0.00753
-3000.00	0.04750	0.04098	0.03395	0.02638	0.01860	0.01268	0.00976	0.00875	0.00954

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 600.00	1000.00	1400.00	1800.00	2200.00	2600.00	3000.00
3000.00	0.04341	0.04415	0.04370	0.04481	0.04989	0.05933	0.07194
2600.00	0.03991	0.03958	0.03910	0.04249	0.05174	0.06597	0.08273
2200.00	0.03679	0.03531	0.03566	0.04273	0.05714	0.07625	0.09679
1800.00	0.03347	0.03099	0.03500	0.04718	0.06663	0.08975	0.11284
1400.00	0.03156	0.02950	0.03703	0.05653	0.07918	0.10409	0.12787
1000.00	0.01562	0.03111	0.04632	0.06492	0.08978	0.11320	0.13502
600.00	0.00071	0.02851	0.05406	0.06516	0.08887	0.10963	0.13013
200.00	0.00000	0.01089	0.04131	0.05244	0.07673	0.09849	0.12013
-200.00	0.00000	0.00489	0.02477	0.03725	0.06039	0.08162	0.10281
-600.00	0.00001	0.00448	0.01431	0.02348	0.04088	0.05859	0.07758
-1000.00	0.00114	0.00225	0.00691	0.01435	0.02543	0.03826	0.05353
-1400.00	0.00395	0.00328	0.00601	0.01223	0.01853	0.02670	0.03728
-1800.00	0.00512	0.00589	0.00880	0.01287	0.01768	0.02289	0.02928
-2200.00	0.00701	0.00807	0.01067	0.01453	0.01899	0.02318	0.02715
-2600.00	0.00864	0.00935	0.01180	0.01593	0.02023	0.02433	0.02769
-3000.00	0.01050	0.01073	0.01228	0.01645	0.02090	0.02486	0.02835

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	0.84648c(86101124)	0.89011c(86082924)	0.77573c(86040324)	1.05879 (86052824)	1.03187 (86052824)
2600.0	0.95410 (86051624)	0.78514c(86082524)	0.76092c(86082924)	0.72408 (86052824)	0.93653 (86052824)
2200.0	1.05384c(86080824)	0.89364c(86082524)	0.77250c(86082524)	0.59171c(86062224)	0.63855 (86052824)
1800.0	1.33451c(86080824)	1.19931c(86080824)	1.01968c(86080824)	0.77444c(86082524)	0.65556c(86062224)
1400.0	1.74139c(86082624)	1.62418c(86082624)	1.35722c(86082624)	1.20790c(86080824)	0.94852c(86080824)
1000.0	1.91228c(86082624)	2.08655c(86082624)	2.15851c(86082624)	2.04783c(86082624)	1.55956c(86082624)
600.0	1.53553c(86082624)	1.85437c(86082624)	2.22150c(86082624)	2.67625c(86082624)	2.82777c(86082624)
200.0	0.98737 (86081024)	1.05924c(86082624)	1.35996c(86082624)	1.78315c(86082624)	1.95145c(86082624)
-200.0	0.81669 (86070624)	0.89422 (86070624)	0.98473 (86070624)	1.26036c(86090124)	1.52022c(86090124)
-600.0	1.07237c(86042424)	1.18625c(86090124)	1.35051c(86090124)	1.53317c(86090124)	1.58754c(86080924)
-1000.0	1.21742c(86042424)	1.23258c(86042424)	1.20003c(86080924)	1.25526c(86080924)	1.32032c(86040324)
-1400.0	1.17634c(86042424)	1.05827c(86042424)	0.95227c(86040324)	1.17132c(86062724)	1.31109c(86062724)
-1800.0	0.97503c(86042424)	0.89928c(86062724)	1.09523c(86062724)	1.18358c(86062724)	1.07819c(86052224)
-2200.0	0.90093c(86062724)	1.04484c(86062724)	1.12590c(86062724)	1.01250c(86062724)	1.23806c(86052224)
-2600.0	1.00898c(86062724)	1.09444c(86062724)	1.04754c(86062724)	0.99714c(86042324)	1.21456c(86052224)
-3000.0	1.06865c(86062724)	1.07184c(86062724)	1.13182c(86042324)	1.07803c(86042324)	1.08431c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	0.91667c(86092324)	1.14618 (86050624)	1.26371 (86080624)	1.41026 (86080624)	1.02693 (86080624)
2600.0	0.84978c(86092324)	1.00841c(86092324)	1.37464 (86080624)	1.54291 (86080624)	1.04137c(86072524)
2200.0	0.73719c(86092324)	1.01501c(86092324)	1.50379 (86080624)	1.69704 (86080624)	1.11860 (86073124)
1800.0	0.55986c(86092324)	1.01614c(86092324)	1.69136 (86080624)	1.93795 (86080624)	1.26880 (86073124)
1400.0	0.72317c(86062224)	0.90498c(86092324)	1.71771 (86080624)	2.03688 (86080624)	1.82713c(86090124)
1000.0	1.11683c(86080824)	0.31040c(86062224)	0.43984 (86080624)	0.60604 (86080624)	1.13035c(86090124)
600.0	1.16351c(86082624)	0.04474c(86062224)	0.00001c(86092324)	0.00002 (86073124)	0.09724c(86090724)
200.0	0.52983c(86082624)	0.00002c(86082624)	0.00000c(86010324)	0.00000 (86111824)	0.00003c(86080724)
-200.0	0.51503c(86090124)	0.00001c(86090124)	0.00000c(86121924)	0.00000c(86021824)	0.00001c(86062024)
-600.0	0.76695c(86040324)	0.05777c(86062724)	0.00001c(86052224)	0.00000 (86022424)	0.00309c(86051124)
-1000.0	1.43827c(86062724)	1.40019c(86052224)	0.25402c(86052224)	0.25990c(86062624)	0.49196c(86062624)
-1400.0	1.54900c(86052224)	1.83382c(86052224)	0.67122c(86052224)	1.37364c(86062624)	1.60880c(86062624)
-1800.0	1.54858c(86052224)	1.29667c(86052224)	0.47895c(86052224)	1.27931c(86062624)	1.60376c(86062624)
-2200.0	1.33484c(86052224)	0.89234c(86052224)	0.42314c(86062624)	1.02118c(86062624)	1.43320c(86062624)
-2600.0	1.07245c(86052224)	0.62338c(86052224)	0.37595c(86062624)	0.84322c(86062624)	1.28371c(86062624)
-3000.0	0.82684c(86052224)	0.61161c(86032824)	0.48458c(86032824)	0.70730c(86062624)	1.13621c(86062624)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	0.89836c(86061424)	1.18297c(86090124)	1.60684c(86090124)	1.74414c(86090124)	1.59606c(86090124)
2600.0	1.01302c(86090124)	1.62450c(86090124)	1.92272c(86090124)	1.81434c(86090124)	1.44969c(86090124)
2200.0	1.54131c(86090124)	2.09340c(86090124)	2.08401c(86090124)	1.66074c(86090124)	1.25348c(86071624)
1800.0	2.22924c(86090124)	2.41136c(86090124)	1.93671c(86090124)	1.50246c(86071624)	2.03202c(86071624)
1400.0	2.90066c(86090124)	2.34694c(86090124)	1.83204c(86071624)	2.42812c(86071624)	2.68047c(86071624)
1000.0	2.29999c(86090124)	2.35121c(86071624)	2.86443c(86071624)	2.92517c(86071624)	2.72141c(86071624)
600.0	1.82631c(86071624)	3.16012c(86071624)	2.74333c(86071624)	2.25592c(86071624)	1.85726c(86071624)
200.0	0.55616c(86080724)	2.21553c(86071324)	2.48969c(86071324)	2.24711c(86071324)	2.09466c(86071324)
-200.0	0.50004c(86071324)	2.62227c(86071324)	2.81584c(86071324)	2.48885c(86071324)	2.29876c(86071324)
-600.0	0.70626c(86062024)	1.49224c(86062024)	1.42091c(86071324)	1.53564c(86071324)	1.56528c(86071324)
-1000.0	0.31134c(86051124)	0.80845c(86051124)	0.99236c(86062024)	1.05838c(86062024)	1.03347c(86062024)
-1400.0	0.77001c(86062624)	0.26833c(86051124)	0.51051c(86051124)	0.68135c(86051124)	0.77619c(86062024)
-1800.0	1.08636c(86062624)	0.46443c(86062624)	0.47503c(86052224)	0.65248 (86042224)	0.75724 (86042224)
-2200.0	1.23991c(86062624)	0.70766c(86062624)	0.54656c(86052224)	0.80847c(86052224)	0.85259 (86042224)
-2600.0	1.30130c(86062624)	0.92519c(86062624)	0.59126c(86090324)	0.85467c(86052224)	1.10394c(86052224)
-3000.0	1.29222c(86062624)	1.08846c(86062624)	0.68962c(86062624)	0.76742c(86090324)	1.10919c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	1.28449c(86090124)
2600.0	1.08299c(86080124)
2200.0	1.68833c(86071624)
1800.0	2.30992c(86071624)
1400.0	2.66033c(86071624)
1000.0	2.40562c(86071624)
600.0	1.65412c(86071524)
200.0	1.97493c(86071324)
-200.0	2.14360c(86071324)
-600.0	1.56643c(86071324)
-1000.0	1.02600c(86050924)
-1400.0	0.84906c(86062024)
-1800.0	0.67237 (86042224)
-2200.0	1.00551 (86042224)
-2600.0	1.09238c(86052224)
-3000.0	1.31383c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -3000.00	-2600.00	-2200.00	-1800.00	-1400.00
3000.0	0.81094c(86082924)	0.70055c(86040324)	0.71176c(86082924)	0.73235c(86051224)	0.72777c(86051224)
2600.0	0.86067c(86082524)	0.74041c(86082924)	0.62167c(86040324)	0.59774c(86040324)	0.61216c(86051224)
2200.0	1.01859 (86051624)	0.86415c(86080824)	0.67319c(86062224)	0.54194c(86082924)	0.44536c(86051224)
1800.0	1.19628c(86082624)	0.94867c(86082524)	0.94151c(86082524)	0.77292c(86062224)	0.46560c(86082524)
1400.0	1.36541c(86080824)	1.35421c(86080824)	1.31061c(86080824)	1.04229c(86070824)	0.92395c(86062224)
1000.0	0.95176c(86080824)	1.06664c(86080824)	1.18885c(86080824)	1.33447c(86080824)	1.48193c(86080824)
600.0	0.94488 (86081024)	0.96430 (86081024)	0.98104 (86081024)	1.04998 (86052924)	1.30753c(86083124)
200.0	0.84172c(86082624)	1.01376 (86081024)	1.06256 (86081024)	1.18616 (86081024)	1.15019 (86081024)
-200.0	0.79559c(86042424)	0.83271c(86082224)	0.98214c(86090124)	1.19792c(86082224)	1.26585c(86082224)
-600.0	1.02785c(86090124)	1.14786c(86042424)	1.23829c(86042424)	1.44423c(86080924)	1.57554c(86090124)
-1000.0	1.06393c(86090124)	1.13128c(86080924)	1.18553c(86042424)	1.03374c(86042424)	1.30538c(86062724)
-1400.0	0.93999c(86080924)	0.92448c(86080924)	0.90581c(86080924)	1.06609c(86040324)	1.13020c(86080924)
-1800.0	0.73806c(86040324)	0.86402c(86040324)	0.90002c(86040324)	0.85908c(86080924)	1.07654c(86080924)
-2200.0	0.77337c(86040324)	0.76854c(86040324)	0.67081c(86080924)	0.88651c(86080924)	1.01007c(86080924)
-2600.0	0.80682c(86060324)	0.68042c(86060324)	0.84138c(86042324)	0.98194c(86052224)	0.86707c(86080924)
-3000.0	0.79617c(86102024)	0.88560c(86042324)	0.92762c(86062724)	1.04135c(86052224)	0.69194c(86080924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) -1000.00	-600.00	-200.00	200.00	600.00
3000.0	0.83583 (86050624)	0.99719c(86092324)	0.94343 (86050624)	1.14979c(86080324)	1.00756c(86072524)
2600.0	0.62714 (86052824)	0.90542 (86050624)	1.01716c(86071724)	1.23367c(86072524)	1.03157 (86080624)
2200.0	0.58053 (86052824)	0.69154 (86080624)	1.10388c(86071724)	1.37999c(86072524)	1.05311c(86061424)
1800.0	0.35881 (86052824)	0.62954c(86071724)	1.25948c(86071724)	1.62098c(86072524)	1.26133c(86082724)
1400.0	0.46056c(86080824)	0.43879c(86071724)	1.23644c(86071724)	1.82124c(86072524)	1.47513c(86082724)
1000.0	0.98784c(86062224)	0.29138c(86092324)	0.34178c(86092324)	0.57996c(86072524)	0.76313c(86082724)
600.0	0.99303c(86080824)	0.03197c(86080824)	0.00000c(86072624)	0.00001c(86082724)	0.05238c(86080124)
200.0	0.33323c(86060424)	0.00001 (86052924)	0.00000c(86120124)	0.00000c(86090624)	0.00003c(86071624)
-200.0	0.45820c(86082224)	0.00001c(86082224)	0.00000c(86070724)	0.00000c(86042924)	0.00001c(86051124)
-600.0	0.66139c(86062724)	0.03456c(86040324)	0.00000 (86101624)	0.00000c(86100324)	0.00156c(86062024)
-1000.0	1.05686c(86080924)	0.51179c(86080924)	0.02812c(86080924)	0.00030c(86052224)	0.00420c(86051124)
-1400.0	1.32566c(86080924)	0.98614c(86080924)	0.30998c(86062624)	0.03365c(86052224)	0.02793c(86072224)
-1800.0	1.12012c(86080924)	0.74365c(86080924)	0.44728c(86062624)	0.11486c(86052224)	0.12542c(86072224)
-2200.0	0.85745c(86080924)	0.47437c(86080924)	0.36263c(86052224)	0.23195c(86052224)	0.22299c(86072224)
-2600.0	0.61968c(86080924)	0.44821c(86032824)	0.36729c(86032824)	0.32215c(86052224)	0.28446c(86052224)
-3000.0	0.53722c(86032824)	0.44667c(86052224)	0.43010c(86082424)	0.45983c(86082424)	0.39489c(86052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 1000.00	1400.00	1800.00	2200.00	2600.00
3000.0	0.88047 (86073124)	1.05015c(86082924)	0.89815c(86082924)	0.80603 (86070524)	0.93706c(86022224)
2600.0	1.00531c(86082724)	0.89315c(86082724)	0.84366 (86070524)	0.90163c(86090724)	1.03886c(86090724)
2200.0	1.11318c(86082724)	0.89816 (86070524)	0.99336c(86090724)	1.17604c(86090724)	1.19451c(86080124)
1800.0	1.13188c(86082724)	1.10023c(86090724)	1.35390c(86090724)	1.32930c(86080124)	1.56247c(86080124)
1400.0	1.23442c(86090724)	1.62242c(86090724)	1.51626c(86080124)	1.59537c(86080124)	1.55472c(86080124)
1000.0	2.02099c(86090724)	1.84038c(86080124)	1.73697c(86080724)	1.79387c(86080724)	1.90995c(86071524)
600.0	1.48360c(86080124)	2.33267c(86080724)	2.08952c(86080724)	1.73566c(86080724)	1.70071c(86071524)
200.0	0.51293c(86071624)	1.62515c(86050824)	1.48198c(86050824)	1.28877c(86050824)	1.36683c(86081824)
-200.0	0.41466c(86062424)	1.50573c(86062424)	1.50120c(86062424)	1.44277c(86062424)	1.43182c(86062424)
-600.0	0.65246c(86051124)	1.28687c(86051124)	1.32437c(86062024)	1.09913c(86062024)	1.11198c(86062424)
-1000.0	0.24447c(86062024)	0.75274c(86062024)	0.96479c(86051124)	0.96010c(86051124)	0.89096c(86051124)
-1400.0	0.05817c(86051124)	0.20233c(86062624)	0.43872c(86062024)	0.63852c(86062024)	0.77015c(86051124)
-1800.0	0.15087 (86061824)	0.28100c(86071924)	0.43648c(86071924)	0.52255c(86052224)	0.48213c(86051124)
-2200.0	0.26233c(86072224)	0.36228 (86061824)	0.52769c(86071924)	0.67153c(86071924)	0.83059c(86052224)
-2600.0	0.38318c(86072224)	0.43760 (86061824)	0.56352 (86061824)	0.73717c(86071924)	0.83845c(86071924)
-3000.0	0.43732c(86072224)	0.43431 (86061824)	0.63651 (86061824)	0.74364 (86061824)	0.86790c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 3000.00
3000.0	1.01742c(86022224)
2600.0	1.04649c(86071624)
2200.0	1.49907c(86080124)
1800.0	1.70124c(86080124)
1400.0	1.77065c(86071524)
1000.0	2.04578c(86071524)
600.0	1.56431c(86071624)
200.0	1.79112c(86081824)
-200.0	1.40768c(86062424)
-600.0	1.17568c(86062424)
-1000.0	0.95614c(86062024)
-1400.0	0.79394c(86051124)
-1800.0	0.58951c(86051124)
-2200.0	0.65791c(86052224)
-2600.0	0.94492 (86042224)
-3000.0	0.93121c(86071924)

**MODELOPTs: CONC RURAL FLAT DFAULT

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

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.13502 AT (3000.00, 1000.00, 0.00, 0.00)	GC	CAR1
	2ND HIGHEST VALUE IS	0.13013 AT (3000.00, 600.00, 0.00, 0.00)	GC	CAR1
	3RD HIGHEST VALUE IS	0.12787 AT (3000.00, 1400.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF TSP IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	3.16012c	ON 86071624: AT (1400.00, 600.00, 0.00, 0.00)	GC	CAR1
	HIGH 2ND HIGH VALUE IS	2.33267c	ON 86080724: AT (1400.00, 600.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

****

*** RUN INFORMATION PAGE ***

INPUT FILENAME IS: anctsp.dta
OUTPUT FILENAME IS: anctsp.lst
RUN TITLE1 IS: ANCLOTE TSP EMISSIONS; UNITS 1-2 @ 0.10 lb/mmBtu
124 G/SEC EMISS. RATE; ANN. 24 h con, FULL LOAD
COMPUTER ID NAME (VOLUME): no label

BEGINNING HOUR,MINUTE,SECOND -------: 14:51:47
BEGINNING MONTH,DAY,YEAR ---------: 09/01/98

ENDING HOUR,MINUTE,SECOND --------: 14:52:09
ENDING MONTH,DAY,YEAR ----------: 09/01/98

TOTAL CPU SECONDS ----------: 22.

****

Anclote NO2

```
CO STARTING
CO TITLEONE ANCLOTE NOx EMISSIONS; UNITS 1-2 @ 0.40 lb/mmBtu
CO TITLETWO 495 G/SEC EMISS. RATE; ANNUAL CONC. @ FULL LOAD
CO MODELOPT DFAULT CONC   RURAL
CO AVERTIME PERIOD
CO POLLUTID NO2
CO DCAYCOEF   .000000
CO RUNORNOT RUN
CO ERRORFIL ERRORS.OUT
CO FINISHED


SO STARTING
** Source Location Cards:
**       SRCID SRCTYP      XS         YS         ZS

SO LOCATION    1 POINT       0.0000      0.0000       .0000

** Source Parameter Cards:
** POINT:  SRCID     QS          HS       TS       VS       DS

SO SRCPARAM    1      495.1       152.100  430.0000   35.1000    7.6000

SO EMISUNIT   .100000E+07 (GRAMS/SEC)       (MICROGRAMS/CUBIC-METER)
SO SRCGROUP ALL
SO FINISHED


RE STARTING
RE GRIDCART CAR1 STA
RE       CAR1 XYINC -3000. 16 400.  -3000. 16 400.
RE       CAR1 END
RE FINISHED


ME STARTING
ME INPUTFIL tpaprl86.bin                    UNFORM
ME ANEMHGHT   6.700 METERS
ME SURFDATA  12842  1986         SURFNAME
ME UAIRDATA  12842  1986         UAIRNAME
ME WINDCATS   1.54   3.09   5.14   8.23   10.80
ME FINISHED


OU STARTING
OU RECTABLE ALLAVE FIRST  SECOND
OU FINISHED

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**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: 1 Source(s); 1 Source Group(s); and 256 Receptor(s)

**The Model Assumes A Pollutant Type of: NO2

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

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
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) = 6.70 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: anNOx.dta ; **Output Print File: anNOx.lst
**Detailed Error/Message File: ERRORS.OUT

**MODELOPTs: 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
1	0	0.49510E+03	0.0	0.0	0.0	152.10	430.00	35.10	7.60	NO	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-3000.0, -2600.0, -2200.0, -1800.0, -1400.0, -1000.0, -600.0, -200.0, 200.0, 600.0,
1000.0, 1400.0, 1800.0, 2200.0, 2600.0, 3000.0,

**MODELOPTs: 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
```

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

**MODELOPTs: CONC RURAL FLAT DFAULT

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

FILE: tpaprl86.bin FORMAT: UNFORM
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: SURFNAME NAME: UAIRNAME
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	USTAR	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0	0.0000	0.0	0.0000	0	0.00
86	1	1	18	47.0	1.00	293.2	5	419.0	418.0	0.0000	0.0	0.0000	0	0.00
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0	0.0000	0.0	0.0000	0	0.00
86	1	1	20	127.0	1.00	290.9	6	437.0	430.0	0.0000	0.0	0.0000	0	0.00
86	1	1	21	130.0	1.00	290.9	6	447.0	435.0	0.0000	0.0	0.0000	0	0.00
86	1	1	22	132.0	1.00	289.8	6	456.0	441.0	0.0000	0.0	0.0000	0	0.00
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0	0.0000	0.0	0.0000	0	0.00
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0	0.0000	0.0	0.0000	0	0.00

*** 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.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF NO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS)								
	-3000.00	-2600.00	-2200.00	-1800.00	-1400.00	-1000.00	-600.00	-200.00	200.00
3000.00	0.22657	0.17110	0.12922	0.10679	0.09865	0.10157	0.11533	0.13549	0.15791
2600.00	0.25545	0.19774	0.14039	0.10112	0.08345	0.08223	0.09619	0.12059	0.14626
2200.00	0.26851	0.22016	0.15978	0.10436	0.07141	0.06240	0.07543	0.10529	0.13592
1800.00	0.26728	0.22793	0.17691	0.11861	0.06977	0.04198	0.04853	0.08822	0.12860
1400.00	0.25590	0.22376	0.18382	0.13653	0.07683	0.03493	0.02850	0.07354	0.12435
1000.00	0.23915	0.21049	0.18110	0.14286	0.10280	0.05207	0.01034	0.01542	0.03595
600.00	0.22748	0.19677	0.17013	0.14083	0.12564	0.05807	0.00113	0.00000	0.00000
200.00	0.22615	0.19137	0.16044	0.12998	0.11185	0.02740	0.00000	0.00000	0.00000
-200.00	0.22832	0.19233	0.15945	0.12658	0.10797	0.02701	0.00000	0.00000	0.00000
-600.00	0.22342	0.18904	0.15691	0.11996	0.09858	0.04184	0.00112	0.00000	0.00000
-1000.00	0.22320	0.18703	0.14964	0.10737	0.07485	0.04935	0.02301	0.00268	0.00236
-1400.00	0.21974	0.17910	0.13847	0.10371	0.06991	0.05015	0.03112	0.01123	0.01303
-1800.00	0.20831	0.16965	0.13473	0.10542	0.07944	0.05112	0.02741	0.01368	0.01561
-2200.00	0.19797	0.16730	0.13826	0.10981	0.08110	0.05204	0.03031	0.02044	0.02270
-2600.00	0.19390	0.16771	0.13957	0.11011	0.07880	0.05046	0.03379	0.02744	0.03011
-3000.00	0.18997	0.16388	0.13576	0.10550	0.07438	0.05073	0.03903	0.03498	0.03815

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** CONC OF NO2 IN (MICROGRAMS/CUBIC-METER) **

Y-COORD (METERS)	X-COORD (METERS) 600.00	1000.00	1400.00	1800.00	2200.00	2600.00	3000.00
3000.00	0.17360	0.17656	0.17476	0.17922	0.19954	0.23728	0.28768
2600.00	0.15963	0.15828	0.15635	0.16991	0.20692	0.26385	0.33084
2200.00	0.14713	0.14123	0.14260	0.17087	0.22853	0.30493	0.38710
1800.00	0.13384	0.12395	0.13997	0.18869	0.26647	0.35894	0.45126
1400.00	0.12623	0.11798	0.14807	0.22607	0.31666	0.41627	0.51138
1000.00	0.06246	0.12440	0.18526	0.25963	0.35903	0.45269	0.53998
600.00	0.00284	0.11400	0.21619	0.26057	0.35542	0.43843	0.52040
200.00	0.00000	0.04357	0.16520	0.20973	0.30688	0.39388	0.48043
-200.00	0.00000	0.01954	0.09908	0.14896	0.24151	0.32643	0.41114
-600.00	0.00005	0.01790	0.05724	0.09389	0.16350	0.23431	0.31026
-1000.00	0.00457	0.00900	0.02765	0.05741	0.10168	0.15302	0.21408
-1400.00	0.01580	0.01311	0.02404	0.04890	0.07411	0.10678	0.14911
-1800.00	0.02049	0.02357	0.03521	0.05146	0.07069	0.09156	0.11710
-2200.00	0.02805	0.03229	0.04268	0.05813	0.07593	0.09270	0.10858
-2600.00	0.03454	0.03740	0.04721	0.06370	0.08091	0.09730	0.11073
-3000.00	0.04199	0.04293	0.04912	0.06577	0.08359	0.09942	0.11337

**MODELOPTs: CONC RURAL FLAT DFAULT

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

** CONC OF NO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.53998 AT (3000.00, 1000.00, 0.00, 0.00)	GC	CAR1
	2ND HIGHEST VALUE IS	0.52040 AT (3000.00, 600.00, 0.00, 0.00)	GC	CAR1
	3RD HIGHEST VALUE IS	0.51138 AT (3000.00, 1400.00, 0.00, 0.00)	GC	CAR1

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

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

****

*** RUN INFORMATION PAGE ***

INPUT FILENAME IS: anNOx.dta
OUTPUT FILENAME IS: anNOx.lst
RUN TITLE1 IS: ANCLOTE NOx EMISSIONS; UNITS 1-2 @ 0.40 lb/mmBtu
495 G/SEC EMISS. RATE; ANNUAL CONC. @ FULL LOAD
COMPUTER ID NAME (VOLUME): no label

BEGINNING HOUR,MINUTE,SECOND -------: 14:07:19
BEGINNING MONTH,DAY,YEAR ---------: 09/01/98

ENDING HOUR,MINUTE,SECOND --------: 14:07:42
ENDING MONTH,DAY,YEAR ----------: 09/01/98

TOTAL CPU SECONDS ----------: 23.

****

Florida Power
CORPORATION

Environmental Services Department

FAX COVER SHEET

DATE: 8/31/98

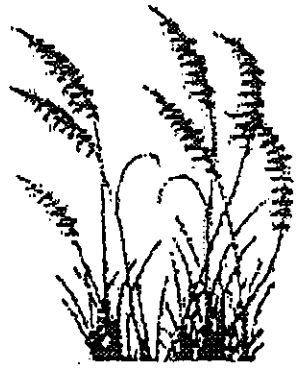
TO: Chris Fancy FAX # (850) 922-6979

COMPANY: DEP

FROM: Sean Eaton PHONE # (727) 826-4258

FAX # 826-4216

NUMBER OF PAGES TRANSMITTED 10
Please call number listed above for any transmission problems.



COMMENTS:
Please review the attached and let me know if its what you need.

Florida Power
CORPORATION

INTEROFFICE CORRESPONDENCE

Energy Supply Plant Improvement Projects (OFFICE) C2E (MAC) 231-5691 (TELEPHONE)

SUBJECT: Anclote Stack Emissions Treatment
Draft GCI Interim Recommendations

TO: Distribution

DATE: June 26, 1995

Attached is the complete draft GCI final report (with all attachments) for the subject project. Please provide any comments to me (231-5691) by 7/3/95.

R. A. Frohnerath
Principal Mechanical Engineer
Energy Supply Plant Improvement Projects

cc: D. K. Belle (w/attach)
D. T. Buell (w/attach)
D. B. Cox (w/attach)
T. R. Courtney (w/attach)
M. E. Higgins (w/attach)
C. L. Gay (w/attach)
T. E. Sesler (w/attach)
S. H. Osbourn (w/attach)
N. A. Peterson (w/attach)
R. J. St Amant (w/attach)
E. J. Watkins (w/attach)
File AN-95-003 (w/attach)

Gilbert/Commonwealth engineers and consultants
2675 Morgantown Road, Reading, PA 19607 • Telephone (610) 855-2000 • FAX (610) 855-2932

June 23, 1995

Mr. Richard Frohnerath
Florida Power Corporation
3201 34th Street South
St. Petersburg, FL 33711-3828

Ref.: Anclote Particulate Fallout Study
Report # G/C 3095
Letter # GC-FPC-009

Dear Richard,

Enclosed please find the draft Final Report for the subject study at Anclote.

If you have further questions or comments regarding this report, please do not hesitate to call.

Sincerely,

R. G. Sensenig

R. G. Sensenig, P.E.
Project Manager

RGS:mjb
enclosures: Particulate Fallout Study

FLORIDA POWER CORPORATION

Particulate Fallout Investigation
Anclote Units 1 and 2

G/C Report No. 3095

Engineering Study

Fossil Engineering
Fossil Operations

By: Bruce Kautsky /jhw
Bruce Kautsky, P.E.

ENGINEERING STUDY REPORT

A. Project Title

Anclote Units 1 and 2 Particulate Fallout Investigation

B. Problem Analysis

The community around the Anclote Station has been reporting incidence of particulate fallout on exposed surfaces including automobiles, lawn furnishings, and vegetation. This particulate has been described as dark agglomerations 1/16 to 1/8 inch in size with an oily or sticky consistency, often surrounded by a yellowish stain. The particles are also reported to be pitting or otherwise corroding the surfaces they fall on. It is possible that this particulate fallout is originating from Anclote Station and may be emanating from the stack during periods of unit start-up, when ramping up from the minimum load of 25 MW, and/or when blowing soot at higher loads. Fallout of ash in the community may be occurring when these operational conditions are concurrent with an on-shore wind which may carry particulate inland rather than out into the Gulf. The potential that the ash fallout is originating from Anclote Station is the primary problem to be addressed in this Engineering Study.

A portion of the particulate responsible for the fallout may result from very low load operation when ash deposits could accumulate in the airheater cold end, boiler exit flues, and stack--agglomerated and bound to the surfaces of these components by a sticky sulfuric acid solution which forms as a result of the low exit gas temperatures, high excess air, and moderate sulfur content of the fuel. When the units are started up, ramped up from low load conditions, or when sootblowing is implemented in the boiler cold end surfaces, particularly in the airheater, the accumulations are agitated or loosened and are entrained with the flue gas out the stack. Due to the mass of these agglomerations, they could fall within close proximity of the stack; due to their acidic content they could tightly adhere to and corrode the surfaces they fall on. This type of particulate fallout is commonly referred to as "acid smut." The oily or slippery consistency of fallout reported in some of the complaints may be attributed to the acid content or may be residual hydrocarbons resulting from incomplete combustion during the low load or ramping period.

Another source of particulate could be related to the entrainment of higher temperature ash deposits(above acid dew point) during sootblowing or increases in load. These higher temperature ash deposits may be loosened from or shed from boiler surfaces when ramping down to minimum load operation. The ash deposits may remain loosely bound to the surfaces or may fall into hoppers and into low velocity areas of the ductwork, such as the expansion area at the airheater exit. Increase in load and sootblowing may agitate these accumulations and entrain them back into the gas stream. It would be expected that ash fallout from these sources would be lighter in color and would not have the corrosive, sticky characteristics reported by many of the community complaints.

Other sources of particulate could be related to poor combustion efficiency or to over-injection of magnesium oxide fuel oil additive during low load operation. It is observed, however, from the results of Combustion Optimization testing in November and December 1993 and more recent emissions testing(for Axxo fuel oil additive) in May 1995, that the unburned combustibles in the fly ash are quite low, generally less than 5% by weight of the fly ash composition, even at the 25MW minimum load condition. Unburned combustibles, measured as carbon in the flyash, is a direct indicator of combustion efficiency; an increase in particulate leaving the boiler which would result from combustion problems would be detected by this measurement of carbon in the flyash. It is also observed from the May, 1995 testing that Magnesium in the fly ash is generally less than 5%, including tests at the 25MW condition. It is concluded that neither poor combustion efficiency nor excessive magnesium injection are responsible for a significant portion of the fallout.

It is noted that community complaints were drastically curtailed when the plant's minimum operating loads were recently raised to meet the higher summer season load requirements. This increase in minimum load(to about 80MW) and the higher ambient temperatures would likely bring boiler exit gas temperatures above the acid dewpoint and the acidic ash agglomerations would be expected to cease. The decrease in community complaints suggests that dew point agglomerations are a more likely potential source of the fallout than the other described mechanisms; however, other variables such as wind conditions may also be influencing the fallout condition.

Based on the decline in customer complaints which coincided with the rise in minimum load and the observed dark, sticky, corrosive nature of the reported fallout (which suggests a significant acid content), it will be assumed in this Engineering Study that the most significant potential cause of the community particulate fallout is the creation of acid smuts due to minimum load operation with airheater exit gas temperatures below the acid dewpoint.

C. Decision Analysis

1.0 Purpose of Decision

The purpose of this Engineering Study is to identify a cost effective solution to the particulate fallout problem which may be emanating from Anclote Station.

2.0 Objectives

The primary intent of this Engineering Study is to identify alternatives for addressing particulate fallout which is potentially originating from the stack at Anclote. A solution is to be recommended which reliably addresses the problem and is consistent with FPC goals for this station, which include achieving the lowest possible costs for production of power to keep Anclote Station economically viable for the present and future competitive arena. To achieve these goals it is likely that FPC will pursue the purchase of higher sulfur oils, up to 2.5%, versus the 1.5% S oils currently fired. While the switch to higher sulfur oils would seem economically attractive, especially in future years as competition for the lower sulfur oils increases, it is recognized that higher sulfur oils will likely raise the acid dew point in the boiler exit gas, potentially compounding the acid smut problem at low minimum loads.

A secondary consideration in this study is the control of opacity and other regulated or soon-to-be regulated flue gas emissions. The switch to higher sulfur oils may also raise opacity, which is, even with the present moderate sulfur oils, already high and pushing the limit of 40% during load ramps. Higher sulfur oils will also result in higher SO_2 emissions; while SO_2 is not currently regulated at Anclote, it will likely be regulated after the year 2000.

3.0 Qualification Statement

This project is to be considered non-discretionary. If Anclote Station is found to be the source of the particulate fallout, legal action may be taken by the community which may require the units to be shut down.

4.0 Alternatives Considered

To address the formation and emission of acid smuts, several courses of action are possible which fall into five categories:

1. Change the mode of operation to avoid the low exit gas temperature conditions in which acid smuts are formed

2. Change the fuel fired at low load to reduce or eliminate the sulfur which is the source of the sulfuric acids

3. Provide a chemical additive system which will tie up sulfur in other stable compounds or will effectively neutralize any acids which are formed

4. Provide a system which will remove acids and/or particulate from the flue gas stream

5. Provide a system which will raise the exit gas temperature at low load above the acid dew point

Several alternative solutions which fall into these categories have been investigated and are discussed below.

Alternative 1a.- Raise Minimum Boiler Load

This change in the mode of operation will eliminate the low exit gas temperature condition in which acid smuts are formed. Some experimentation may be necessary to determine the optimum boiler load point, including monitoring of boiler exit gas temperatures and boiler exit surface temperatures at various load points. The objective would be to achieve a minimum load which keeps boiler exit gas temperatures above acid dew point. It would also be advantageous to somehow monitor and confirm the impact of higher minimum load operation on the fallout in the local neighborhoods. There is already a preliminary indication, based on recent summer season operation as discussed above, that minimum loads of 80 MW are sufficient to avoid the acid smut problem.

This action may also reduce the shedding of ash which could be occurring to a greater degree at the present 25 MW minimum load.

Side benefits of higher minimum load operation may include less impact on boiler feedwater quality(dissolved oxygen) and less impact on the turbine cold end(water droplet erosion).

While this alternative will be effective at addressing the primary problem of ash fallout, it is likely that the change in minimum load will result in less economical system operation. This alternative therefore does not seem to meet the long term objectives for the plant; however, some sensitivity analysis could be conducted of the costs associated with displacement of lower cost generation during off peak hours to verify that this is not a least cost option under any foreseeable condition.

There are also no equipment modifications or associated capital expenditures associated with this option.

Alternative 1b.-Operation at Lower Excess Air

Many studies have documented the potential for reducing the conversion of SO_2 to SO_3 by lowering the boiler excess air. These reductions have been verified through operating experience at Anclote. If SO_3 formation can be reduced, the potential to form sulfuric acid can also be reduced. However, at the very low loads where gas temperatures are passing through the acid dew point, the level of excess air is dictated by NFPA guidelines which recommend a minimum of 25% of the full load combustion air flow as the minimum permissible air flow through the boiler. At 25 MW, this translates to an excess air of about 200%. The literature predicts very little decrease in SO_3 conversion at excess airs above about 25%. Therefore, it does not appear that any tuning of excess air at low load operation will provide a significant reduction of SO_3 conversion.

It is noted, however, that the units at Anclote seem to be running well above the required 25% of full load combustion air flow. CEMS data from April, 1995, shows gas flows at 25 MW which correspond to about 40-50% of the full load combustion air flow, assuming about 10% airheater leakage. If the majority of this extra excess air is coming all the way through the boiler, it may be significantly changing the heat transfer characteristics at low load and therefore the exit gas

temperature. The direction and magnitude of this change can be predicted by running a boiler performance model. If a significant portion of the extra excess air results from airheater leakage, this may be lowering the airheater exit gas temperatures by dilution. In either case, the airheater exit gas temperatures are likely being affected by the current levels of excess air at minimum load. If the sources of, or reasons for, extra air can be identified and addressed, it may be possible to lower the load condition at which acid dew point is encountered.

Addressing the high excess air situation may require capital or O&M expenditures for F.D. fan control improvement or airheater seal refurbishment.

Alternative 2a. -- Firing at Minimum Load with No. 2 Fuel Oil

Since No. 2 oil has a negligible sulfur content, its use during minimum operation would eliminate the formation of sulfuric acid. Switching to No. 2 oil at low loads will require some changes in operating procedure and some operator efforts to manually change guns when transitioning to and from the low load point. This alternative will not require any capital expenditures; however, there will be a considerable increase in operating cost due to the fuel price difference.

A yearly operating cost increase of approximately $1,450,000 would be incurred when firing No. 2 oil at the 25 MW minimum load condition based on the following assumptions:

- Price of current 1.5 S No. 6 oil = $2.79/MMBtu
- Price of No. 2 oil = $3.97/MMBtu
- Both units operate at 25MW for 8 hours/day, half the days of the year(183 days)

Some non quantified benefits of firing no. 2 oil at low loads include reduction of the corrosion of airheater cold end and exit flues and an improvement in the low load opacity and combustion conditions.

This alternative does not address higher load particulate or opacity problems, but will allow a switch to higher sulfur oils in the future without a negative impact on low load acid smut emissions.

Alternative 2b.-- Firing at Minimum Load With Natural Gas

The addition of an elevation of natural gas burners at Anclote Units 1 & 2 would alleviate the acid smut problem encountered during low load operations by avoiding the production of SO_3.

Adding natural gas firing to Units 1 & 2 would involve bringing natural gas to the plant site, installing a metering and regulating station, piping the gas from the metering station to the burner columns, and adding an elevation of natural gas burners.

Bringing gas to the plant site would require obtaining various permits, including right of way, and a contract with a natural gas company. The installation of the gas supply line to the site would be the responsibility of the gas company involved. Installing a metering and regulating station would also

be accomplished by the gas company. The costs associated with bringing the natural gas to the site and installing the metering station are included in the costs presented below.

Piping the natural gas from the metering station to the burner columns would be the responsibility of Florida Power Corporation. In conjunction with the installation of the natural gas burners and the gas supply and distribution system, several other systems would have to be incorporated which should meet current NFPA codes for firing natural gas. These other systems include a burner management system, a gas venting system, and a nitrogen purge system. The nitrogen purge system is not required by the NFPA, but is highly recommended for additional safety during system repairs and routine maintenance.

The main natural gas pipe will be installed underground up to the boiler building. It will be heavy walled to withstand vehicle traffic and will be coated for corrosion protection. A sacrificial anode type cathodic protection system will also be furnished as required. The gas distribution system will be made of carbon steel. Piping larger than 2 inches in diameter will be schedule 40. Piping 2 inches and below will be schedule 80.

In addition to the reduction of acid smut production, there are a few other benefits that can be realized when adding natural gas to the fuel system. These advantages include improved air heater cleanliness and performance and a reduction in the fire potential in the air heater, improved turndown capability which would increase combustion efficiency at low loads, and the potential to reduce NO_x emissions should that become a concern in the future.

The addition of natural gas firing capability to both units would eliminate the production acid smut during low load operations, startup, and shutdown. However, it will not address other emissions problems. There are other benefits to firing natural gas, as described above, but it is one of the more expensive options. The capital costs associated with this option are approximately $6,500,000. The operating costs when firing natural gas at low loads will decrease by approximately $480,000, based on the following assumptions:

- Price of natural gas = $2.40/MMBtu
- Price of current 1.0 S No. 6 oil = $2.83/MMBtu
- Both units operate at 25MW for 8 hours/day, half the days of the year(183 days)

Conversion of the units to 100% natural gas firing or co-firing would effectively address all the primary and secondary concerns of this Study. The incremental costs for this conversion versus all the short and long term benefits, including those discussed in this study, should be reviewed.

Alternative 2c.-- Firing a Lower Sulfur No. 6 Oil

If Anclote switches back to a lower sulfur No. 6 oil, acid dew point will be lowered and acid smut emissions may be adequately reduced. Lower sulfur No. 6 oil will also improve opacity and SO_2 emissions for longer term regulatory considerations.