ENVIRON International Corporation

CALPUFF AND AERMOD MODELING OF BENZENE IN CORPUS CHRISTI

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EXECUTIVE SUMMARY

Numerous chemical plants, refineries and other industrial facilities near the Corpus Christi ship channel release toxic air pollutants like benzene into the air. Many of these facilities are located blocks away from residential areas, as can be seen in Figure ES-1. Two air dispersion models, CALPUFF and AERMOD, were used to predict air concentrations of benzene in populated areas and at sensitive receptor locations such as schools and hospitals. There are others sources of air toxic emissions beside industrial facilities, such as mobile sources and small stationary sources, which were not included in this modeling but will be included in the next phase of this modeling study.

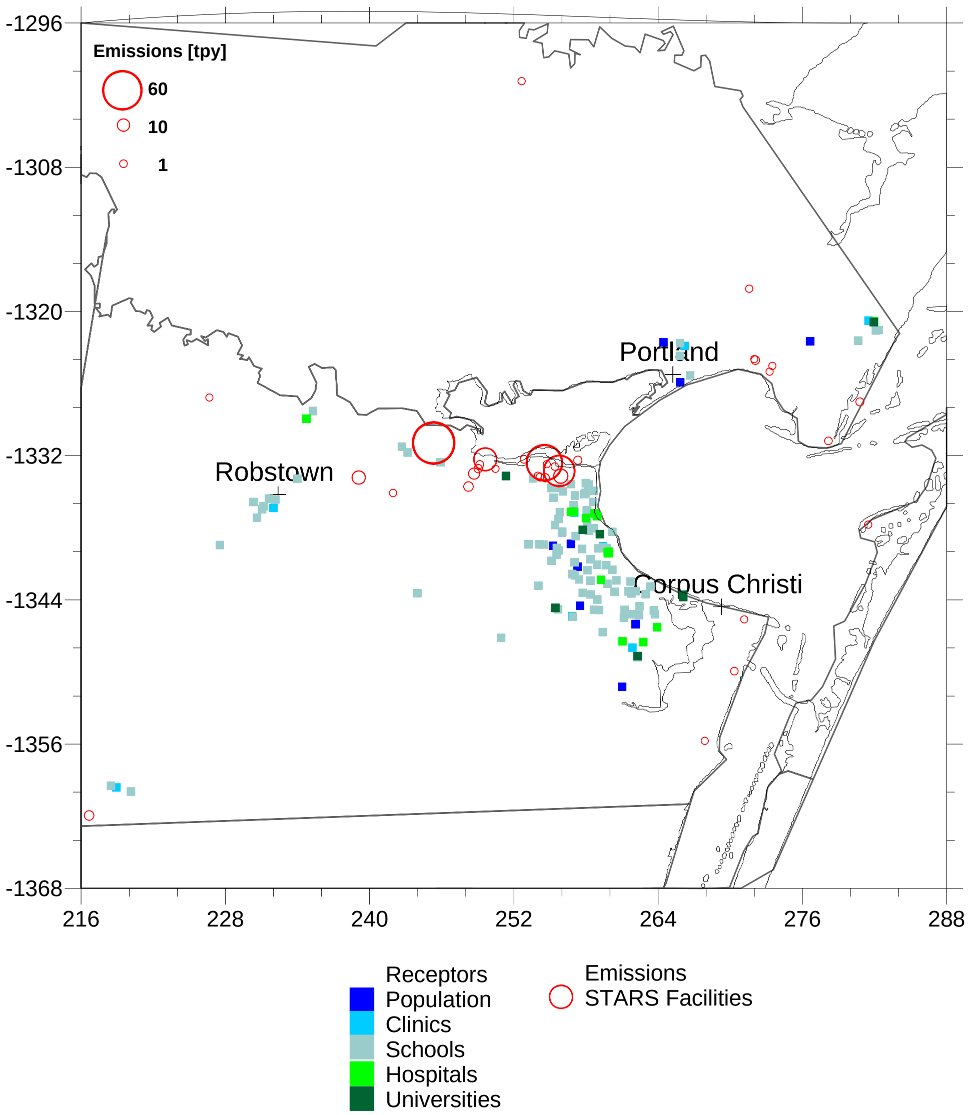
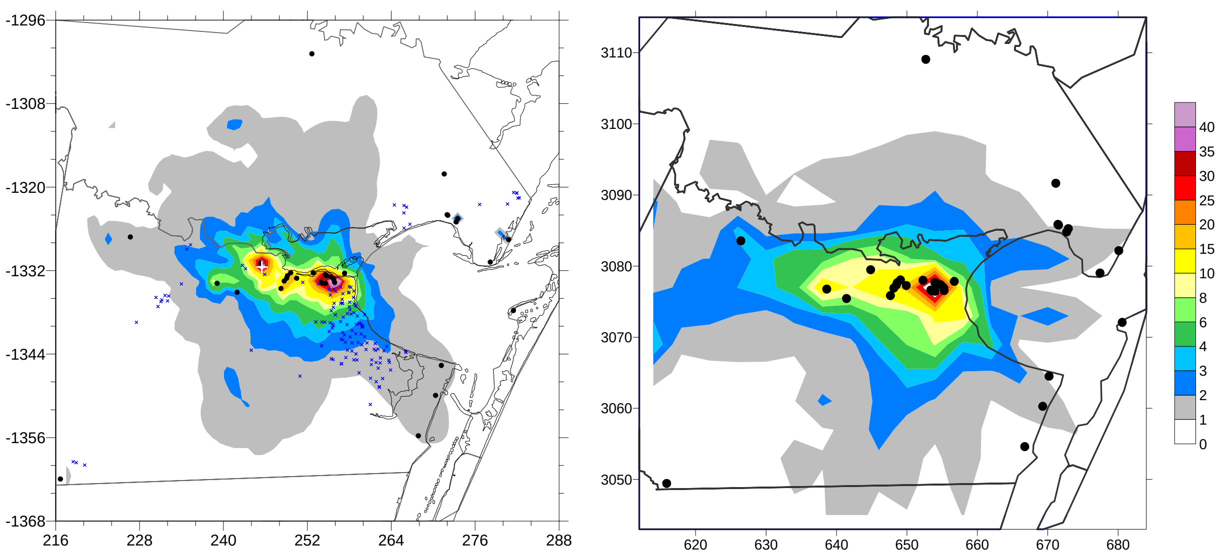


Figure ES-1. Map of the CALPUFF modeling domain with locations of the receptors and emissions.

CALMET is the meteorological pre-processor for CALPUFF. Several CALMET sensitivity tests were evaluated to select model configurations that produced favorable wind fields in Corpus Christi. The evaluation of CALMET wind field performance was subjective because all available wind observations were employed in creating the wind fields leaving no data for an independent evaluation. Desirable CALMET options were determined to be the use of high-resolution coastline data, terrain kinematics, and additional smoothing aloft to help reduce the magnitude of the vertical velocity. Numerous CALPUFF model options also were tested and favorable CALPUFF options included the use of high-resolution coastline data and using micrometeorological variables to compute dispersion coefficients.

CALPUFF and AERMOD were run from October 1 to November 30, 2006 to evaluate the impacts of benzene from individual and from all chemical plants and refineries near Corpus Christi. The emissions inventory was developed by the TCEQ for calendar year 2005. Figure ES-2 shows spatial plots of the episode maximum concentration to gridded receptors when using CALPUFF on the left and AERMOD with Oak Park meteorology on the right. CALPUFF predicted higher benzene concentrations near the sources with local maxima over the two largest facilities (Flint Hills West and Valero East); AERMOD only simulated one peak that was lower than either peak in CALPUFF, possibly due to the coarser grid resolution in AERMOD. AERMOD (with Oak Park meteorology) tended to disperse benzene further downwind than CALPUFF.

Among the discrete receptors, which represent the locations of schools and hospitals, the highest hourly benzene concentration from all sources was comparable – 34 ppb in CALPUFF and 33 ppb in AERMOD (when using meteorological data from Oak Park) – but taking place at different receptors and dates.



CALPUFF. Max = 53.2 ppb, Second peak at 47.4. ppb

AERMOD. Max = 43.5 ppb

Figure ES-2. Episode maximum hourly benzene concentrations from CALPUFF and AERMOD on the left and right sides, respectively.

The largest contributions from each of the five largest sources of benzene to any discrete receptor are listed in Table ES-1 from two AERMOD runs, which used meteorology from different surface stations (Solar Estates and Oak Park), and from CALPUFF. Flint Hills West emitted the most benzene, but Citgo East produced the highest concentration at any discrete receptor in AERMOD, while Valero East produced the highest concentration among individual facilities in CALPUFF. The highest concentration to a discrete receptor in CALPUFF was always slightly higher or in between the two AERMOD runs, and always took place late at night or early in the morning. Dates and receptor locations of the highest benzene concentration between CALPUFF and AERMOD never matched.

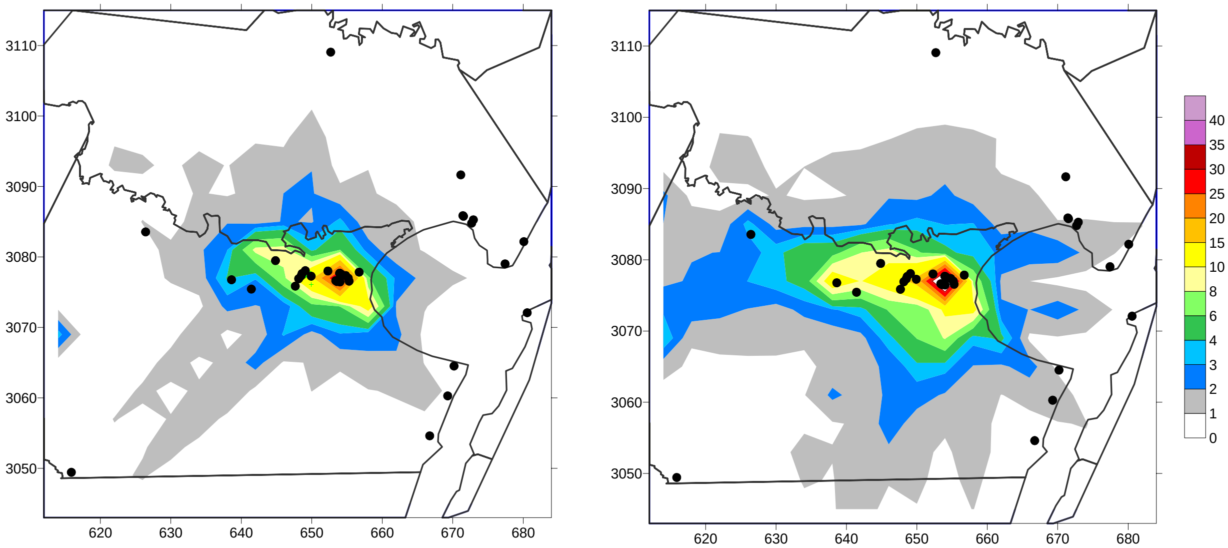
Table ES-1. Maximum benzene concentrations at discrete receptors from individual facilities using AERMOD and CALPUFF.

Facility	AERMOD (Solar Estates Met)	Date	AERMOD (Oak Park Met)	Date	CALPUFF	Date
All	26.69	Nov 16	32.86	Nov 18	34.20	Oct 22
Flint Hills West	11.55	Nov 16	26.22	Nov 6	19.10	Nov 18
Citgo East	14.37	Nov 16	29.34	Nov 18	18.98	Nov 17
Valero East	11.80	Oct 4	24.92	Nov 6	27.67	Oct 22
Valero West	3.80	Oct 14	6.79	Nov 13	6.01	Oct 6
Koch Petroleum	5.01	Nov 18	12.85	Nov 18	9.50	Nov 6

A significant limitation to AERMOD is its inability to incorporate meteorology from more than one surface site. Figure ES-3 compares the episode maximum benzene concentration from two AERMOD runs using surface meteorology from sites within 10 km of one another – Oak Park and Solar Estates.

The use of Oak Park meteorology produced higher benzene concentrations throughout the modeling domain when compared to Solar Estates meteorology, including a domain peak that was 12 ppb larger. Peak contributions from each of the individual facilities to any discrete receptor were twice as large with Oak Park meteorology compared to Solar Estates. These results suggest a high level of uncertainty due to this limitation in AERMOD.

CALPUFF uses three-dimensional wind and temperature fields that incorporate meteorological data from multiple sites, which is a major advantage over AERMOD, but requires more computational time. Observations were not available in time to determine which model performed better.



AERMOD with Solar Estates Meteorology
Max = 31.8 ppb

AERMOD with Oak Park Meteorology.
Max = 43.5 ppb

Figure ES-3. Episode maximum hourly benzene concentrations in two AERMOD runs using different surface meteorology.

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1. INTRODUCTION

The Port of Corpus Christi is surrounded by numerous refineries and chemical industries, which can emit air toxics such as benzene. Short distances between these industries and residential neighborhoods create the potential for high exposures to air toxins. The University of Texas at Austin (UT) is conducting an air toxics study in the Corpus Christi area to model the impacts in highly populated areas including sensitive locations such as schools, hospitals, and clinics.

ENVIRON has prepared a base case CALMET and CALPUFF run to simulate benzene over Corpus Christi using a 72 x 72 domain at 1 km resolution in the NWS-84 spherical datum for the October-November, 2006 episode. The 72 x 72 grid corresponds to a 2 x 2 block of 36 km CAMx regional model grid cells, should a gridded model be used in the future. CALMET incorporated data from 18 surface stations (8 local stations near the ship channel and 10 National Weather Service monitors), 1 upper air sounding site (Corpus Christi Airport), 5 precipitation sites, and 1 buoy.

CALMET sensitivity tests were subjectively evaluated in Section 2 to examine model options that produced the most favorable wind fields. The final configuration incorporated all desirable options. In Section 3, CALPUFF sensitivity tests used the optimal CALMET configuration to evaluate the model's response to different emissions, meteorology, and other model options. The most favorable CALMET and CALPUFF configurations were used to run the full October 1 to November 30, 2006 episode. Model results examined benzene concentrations at both discrete and gridded receptors from all sources and from individual facilities.

The AERMOD model was also set up to predict benzene concentrations in Corpus Christi. Section 4 compares two AERMOD runs using surface meteorological data from two stations separated by approximately 10 km since AERMOD is limited to one meteorological station per run. A source apportionment analysis was also performed to examine the impacts from the largest facilities. Section 5 compares the results between the AERMOD and CALPUFF runs.

2. CALMET MODELING

CALMET and CALPUFF were used to predict benzene concentrations at schools, hospitals, clinics, and highly populated areas in Corpus Christi during October and November, 2006. CALMET is a diagnostic meteorological model and CALPUFF is a Lagrangian puff dispersion model (to be discussed in Section 3).

CALMET reads in terrain, landuse, and meteorological observations to produce gridded wind and temperature fields, and other surface parameters. After initializing the wind fields for each hour, CALMET accounts for slope flows, kinematics, and terrain blocking effects. Meteorological observations are then nudged into the fields, followed by divergence minimization and smoothing.

This section describes the inputs needed for CALMET followed by model sensitivity tests to find the optimal model configuration for the region. All runs were made in Linux using CALMET Version 5.8, the latest version approved by the EPA.

2.1. CALMET INPUTS

The Corpus Christi modeling domain covers most of Nueces and San Patricio Counties, spanning 72 km by 72 km in 1 km resolution, as shown in Figure 2-1. The domain uses the same Lambert Conformal Projection (LCP) used by TCEQ in their CAMx modeling work, with a center at 100W and 40N and true latitudes at 30N and 60N. The domain, which runs from (216, -1368) to (288, -1296), coincides with the 36 km domain used by TCEQ for regional modeling with CAMx.

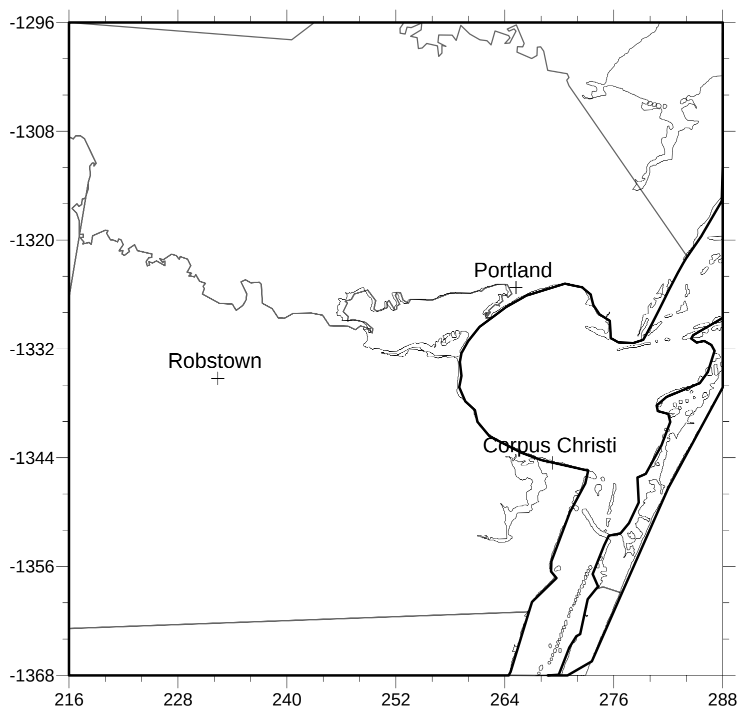


Figure 2-1. Domain map of Corpus Christi.

CALMET uses terrain following coordinates. The initial run used 10 vertical layers up to 4 km above the ground. Latter runs revised the vertical structure to 14 layers up to 3 km to improve coordination with the TCEQ CAMx vertical layer structure.

Terrain and landuse data were processed using the TERREL and CTGPROC preprocessors, respectively. USGS 1-degree terrain data (~90 m resolution) were downloaded from http://edcftp.cr.usgs.gov/pub/data/DEM/250/ and input into the TERREL program. DEM files for Corpus Christi and Beeville were needed to cover the entire domain. Terrain data was output at 1 km resolution for the Corpus Christi domain in the NWS-84 spherical datum, as used in CAMx.

USGS landuse/land cover data files in Composite Theme Grid (CTG) format were downloaded from http://edcftp.cr.usgs.gov/pub/data/LULC/250K/. Files were compressed using the CTGCOMP preprocessor; fractional landuse for each of the 38-landuse categories in each grid cell were output using the CTGPROC preprocessor.

The MAKEGEO preprocessor consolidated the terrain and landuse outputs from TERREL and CTGPROC. In addition to listing terrain and the dominant landuse category for each grid cell, MAKEGEO output the roughness length, albedo, Bowen ratio, soil heat flux parameter, anthropogenic heat flux, and leaf area index of each cell. These parameters were computed from the default values of each property that were assigned to each landuse category, as listed in Table 2-1, weighted by the fractional landuse in each grid cell.

Spatial plots of terrain and the dominant landuse category are displayed on the left and right sides of Figure 2-2, respectively.

Table 2-1. Default properties for each landuse category in CALMET.

Category	Description	Rough-ness Length (m)	Albedo (0 to 1)	Bowen Ratio	Soil Heat Flux Parameter	Anthro Heat Flux (W/m**2)	Leaf Area Index	Output Category ID
11	Residential	0.5	0.18	1	0.2	0	1	10
12	Commercial and Services	1	0.18	1.5	0.25	0	0.2	10
13	Industrial	1	0.18	1.5	0.25	0	0.2	10
14	Transportation, Communications, Utilities	1	0.18	1.5	0.25	0	0.2	10
15	Industrial and Commercial Complexes	1	0.18	1.5	0.25	0	0.2	10
16	Mixed Urban or Built-up Land	1	0.18	1.5	0.25	0	0.2	10
17	Other Urban or Built-up Land	1	0.18	1.5	0.25	0	0.2	10
21	Cropland and Pasture	0.25	0.15	1	0.15	0	3	20
22	Orchards	0.25	0.15	1	0.15	0	3	20
23	Confined Feeding Operations	0.25	0.15	1	0.15	0	3	20

Category	Description	Rough-ness Length (m)	Albedo (0 to 1)	Bowen Ratio	Soil Heat Flux Parameter	Anthro Heat Flux (W/m**2)	Leaf Area Index	Output Category ID
24	Other Agricultural Land	0.25	0.15	1	0.15	0	3	20
31	Herbaceous Rangeland	0.05	0.25	1	0.15	0	0.5	30
32	Shrub and Brush Rangeland	0.05	0.25	1	0.15	0	0.5	30
33	Mixed Rangeland	0.05	0.25	1	0.15	0	0.5	30
41	Deciduous Forest	1	0.1	1	0.15	0	7	40
42	Evergreen Forest	1	0.1	1	0.15	0	7	40
43	Mixed Forest	1	0.1	1	0.15	0	7	40
51	Streams and Canals	0.001	0.1	0	1	0	0	51
52	Lakes	0.001	0.1	0	1	0	0	51
53	Reservoirs	0.001	0.1	0	1	0	0	51
54	Bays and Estuaries	0.001	0.1	0	1	0	0	54
55	Oceans and Seas	0.001	0.1	0	1	0	0	55
61	Forested Wetland	1	0.1	0.5	0.25	0	2	61
62	Non-forested Wetland	0.2	0.1	0.1	0.25	0	1	62
71	Dry Salt Flats	0.05	0.3	1	0.15	0	0.05	70
72	Beaches	0.05	0.3	1	0.15	0	0.05	70
73	Sandy Areas other than Beaches	0.05	0.3	1	0.15	0	0.05	70
74	Bare Exposed Rock	0.05	0.3	1	0.15	0	0.05	70
75	Strip Mines, Quarries, Gravel Pits	0.05	0.3	1	0.15	0	0.05	70
76	Transitional Areas	0.05	0.3	1	0.15	0	0.05	70
77	Mixed Barren	0.05	0.3	1	0.15	0	0.05	70
81	Shrub and Brush Tundra	0.2	0.3	0.5	0.15	0	0	80
82	Herbaceous Tundra	0.2	0.3	0.5	0.15	0	0	80
83	Bare Ground	0.2	0.3	0.5	0.15	0	0	80
84	Wet Tundra	0.2	0.3	0.5	0.15	0	0	80
85	Mixed Tundra	0.2	0.3	0.5	0.15	0	0	80
91	Perennial Snowfields	0.05	0.7	0.5	0.15	0	0	90
92	Glaciers	0.05	0.7	0.5	0.15	0	0	90

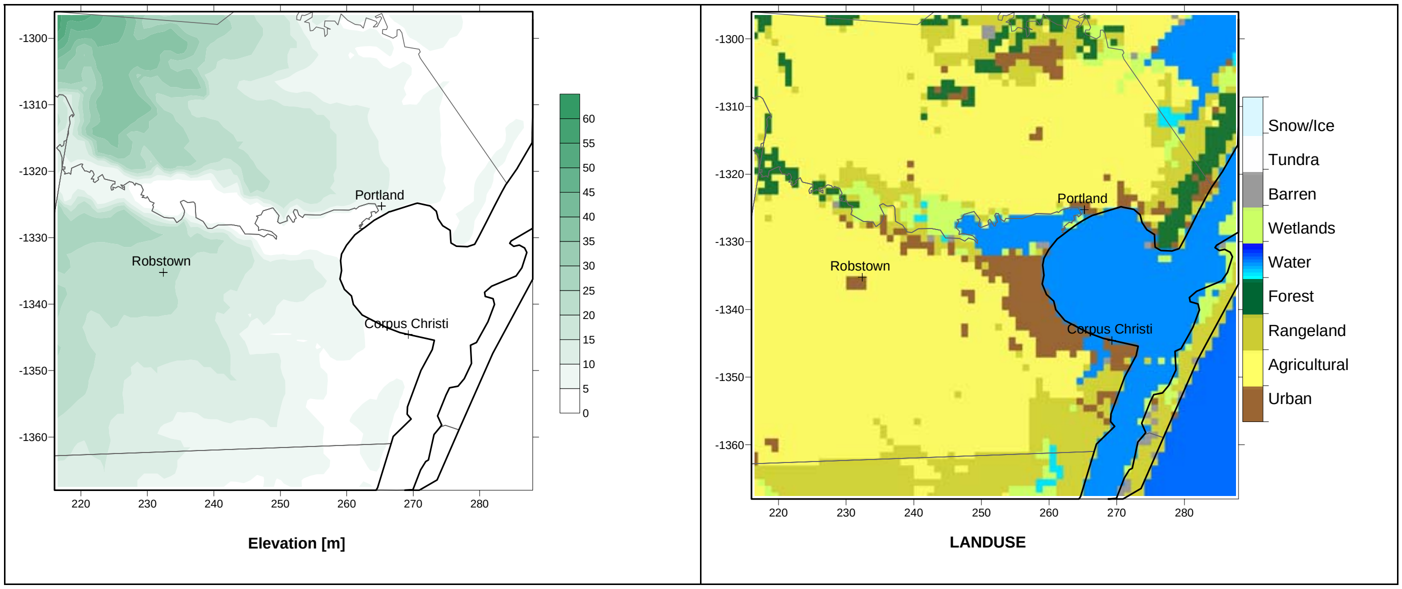


Figure 2-2. Gridded fields of terrain (left) and dominant landuse type (right).

Meteorological data was processed using four additional preprocessors. SMERGE processed the surface meteorology; READ62 processed upper air meteorology; PXTRACT/PMERGE processed precipitation; and BUOY processed surface stations over water. Figure 2-3 displays the location of all meteorological stations. CALMET will process meteorological data from all stations, regardless of whether they are located inside or outside the modeling domain, denoted by the inner black box.

Surface meteorological data was available from 8 local monitors near the Port of Corpus Christi and from 10 land-based National Weather Service (NWS) stations. A perl script was developed to format the local data into a CALMET-ready format. SMERGE formatted the NWS meteorology, which was obtained in the TD-3505 format, and added it to the formatted local surface sites.

The CALMET-formatted surface meteorology file contained surface wind speed and direction, temperature, relative humidity, pressure, cloud cover, and ceiling height. Linear interpolation was performed when one of the meteorological variables was missing from all 18 monitors during the hour.

The closest buoy to Corpus Christi was Buoy 42020, located 50 nautical miles southeast of Corpus Christi. The hourly buoy data for Buoy 42020 came from the National Data Buoy Center. Data was reformatted to be compatible with the BUOY preprocessor, which output hourly air temperature, relative humidity, wind speed and direction, and a difference in air and sea surface temperature. Missing data was linearly interpolated.

Precipitation data in the National Climate Data Center TD-3240 format was processed using PXTRACT to extract individual monitoring stations near Corpus Christi, and using PMERGE to reformat and merge all precipitation stations together. Five precipitation monitoring stations were available during the modeling period.

Upper air data was processed using the READ62 preprocessor. Data from the Corpus Christi International Airport upper air station was downloaded from http://raob.fsl.noaa.gov/ in the original FSL format. READ62 output multi-level pressure, height, temperature, and wind speed and direction data from the surface to 500 mb every 12 hours.

Since CALMET requires data at least once every 12 hours, missing data were manually filled in at the mandatory levels. From 850 mb to 500mb, all data was linearly interpolated using records from 12 hours before and after the missing period. Below 850 mb, height and temperature data were interpolated using records from ±24 hours to account for diurnal impacts; winds were interpolated using records from ±12 hours.

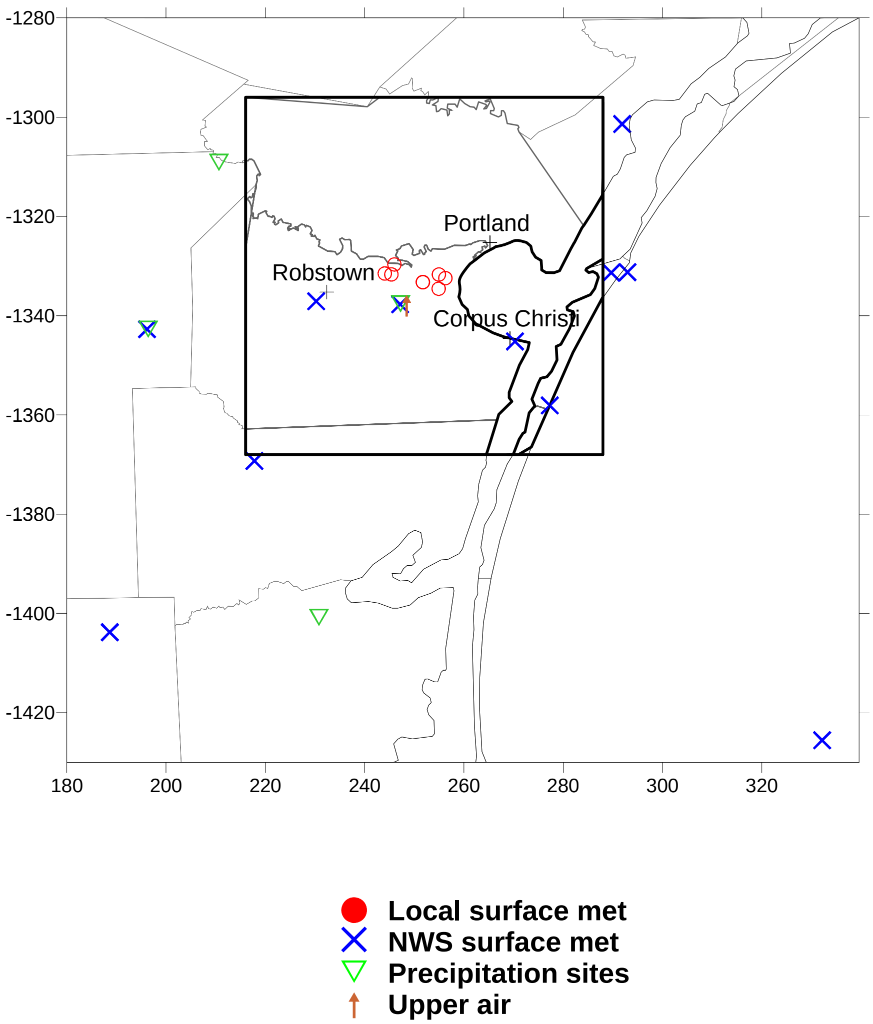


Figure 2-3. Location of the meteorological stations near Corpus Christi.

2.2. CALMET RUN 1

The first CALMET run consisted of 10 vertical layers up to 4 km. CALMET was configured with the default wind field options and parameters, as listed in Table 2-2. The complete list of input files and options used in the final configuration can be found in Appendix A.

Table 2-2. Wind field options used in CALMET Run 1.

Description	Variable	Option selected
Model selection variable	IWFCOD	1. Diagnostic wind module
Compute Froude number adjustment	IFRADJ	1. Yes
Compute kinematic effects	IKINE	0. No
Use O'Brien procedure	IOBR	0. No
Compute slope flow effects	ISLOPE	1. Yes
Extrapolate surface wind observations to upper layers	IEXTRP	-4. Similarity theory used, ignore layer 1 at upper air stations
Extrapolate surface winds when calm	ICALM	0. No
Layer-dependent biases	BIAS	-1,9*0 (-1 = no upper air station influence; 0 = weigh surface and upper air stations equally)
Use MM5 as input to CALMET	IPROG	0. No
Use varying radius of influence	LVARY	F
Max radius of influence over land in layer 1	RMAX1	75 km (no default)
Max radius over land aloft	RMAX2	75 km (no default)
Max radius over water	RMAX3	100 km (no default)
Min radius of influence in wind field interpolation	RMIN	0.1 km
Radius of influence of terrain features	TERRAD	15 km (no default)
Relative weighting of first guess field and obs in layer 1	R1	10 km (no default)
Relative weighting of first guess field and obs aloft	R2	25 km
Max divergence in divergence minimization procedure	DIVLIM	5.0E-6
Max number of iterations for div. Minimization	NITER	50
# passes in smoothing	NSMTH	2 (layer 1), 4 aloft
Max # stations in each layer for interpolation of data to a grid point	NINTR2	99 for all layers
Critical Froude number	CRITFN	1.0
Empirical factor for kinematic effects	ALPHA	0.1

A CALMETPAVE FORTRAN program was developed to convert the CALMET outputs to CAMx format so they could be viewed using the PAVE graphics program. The left side of Figure 2-4 displays the wind fields at 6PM on October 1 for three vertical layers in the model. The background colors represent wind speed; the wind vectors at every third grid cell show the direction of the wind flow. The right side of Figure 2-4 shows the vertical velocity field in the same three layers. CALMET outputs horizontal wind fields in the middle of each vertical layer; vertical velocity is at the top of each layer interface. The layer interfaces plotted are at 20 m (layer 1), 1200 m (layer 7), and 3000 m (layer 9). Note the scale is higher for the upper layers.

In the snapshot of the horizontal wind field, winds were mostly southeasterly or east-southeasterly in all three layers. Wind speeds were faster over water in the lowest layer. The observational nudging at some surface sites was very apparent, denoted by the round local maxima, such as over Robstown, Corpus Christi Airport, and Malaquite Beach; their influence spread aloft into layer 7.

Vertical velocity in layer 1 was within ±0.01 m/s in most grid cells. Upwind of each of the three local maxima, sinking air was detected to help feed the increasing wind speed; rising air could be found downwind of each maxima to compensate for the horizontal speed convergence. Vertical velocity magnitudes were greatest near the Port of Corpus Christi, where numerous local surface observation sites were located.

Small differences in the wind observations can lead to subtle changes in the horizontal wind field, which can be more evident when viewing the vertical velocity fields. These perturbations in the vertical velocity appeared to amplify aloft, approaching 2 m/s by layer 9 (3000 m), which seems too fast. Changes to the model configuration were needed.

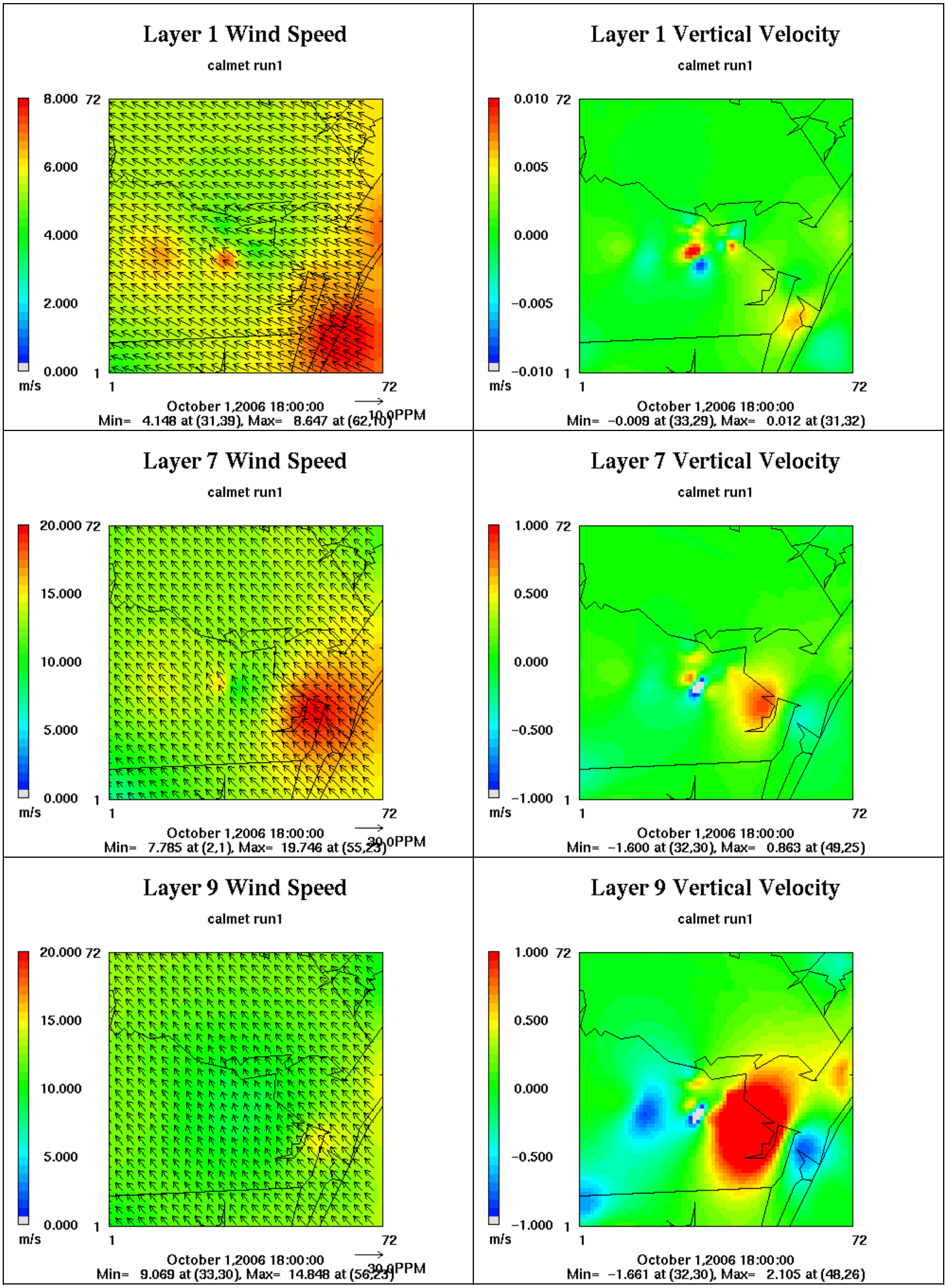


Figure 2-4. Spatial plots of CALMET Run 1 horizontal wind (left) and vertical velocity (right) fields in layer 1 (20m), layer 7 (1200m), and layer 9 (3000m) from top to bottom.

2.3. CALMET SENSITIVITY TESTS

Sensitivity tests were performed on some of the key options to identify the configuration that produced more realistic meteorological fields, based on the wind fields of October 1. Tests included the following:

- Updating the vertical layer structure
- Adding high resolution coastline data
- Moving the buoy closer to the domain
- Turning on the O'Brien vertical velocity adjustment
- Activating terrain kinematics and divergence minimization
- Changing the maximum radius of influence
- Changing the maximum number of stations to influence each grid cell
- Changing the terrain radius of influence
- Changing the number of sweeps for smoothing

Sensitivity to vertical layer structure

Run 2 was configured exactly like Run 1 except 14 vertical layers up to 3 km were used instead of 10 layers up to 4 km. The new layer structure is listed in Table 2-3 and matches the CAMx layer structure used by TCEQ, except the first layer in CAMx was split into two layers in CALMET. CALMET requires the top of the first layer to be between 18 and 22 m so that the middle of the layer will be around 10 m – the typical height of the wind measurements.

Table 2-3. Vertical layer structure used by CALMET in Run 1 and Run 2.

Layer	Run 1 layer interfaces (m)	Run 2 layer interfaces (m)	Run 2 heights at midlayer (m)
14		3026	2565
13		2103	1728
12		1353	1211
11		1068	930
10	4000	791	701
9	3000	610	565
8	2000	520	476
7	1200	432	388
6	640	344	301
5	320	257	214
4	160	171	128
3	80	85	60
2	40	34	26
1	20	18	9

The top of Figure 2-5 shows spatial fields of the horizontal wind and vertical velocity fields in layer 1 of CALMET Run 2 at 6PM on October 1. Run 2 horizontal and vertical wind fields resembled Run 1, but the magnitudes were slightly lower in Run 2 because the height of layer 1 in Run 2 was slightly lower than in Run 1.

The bottom of Figure 2-5 displays corresponding wind and vertical velocity fields from layer 10 of Run 2, whose midlayer is approximately 700 m above the ground. Since the height structure between Run 1 and Run 2 differed, no direct comparison could be made for the layers aloft, but the trends were the same.

In Run 2, the magnitudes of wind speed and vertical velocity were much greater aloft than at the surface. Areas with local maxima in wind speed in layer 1 also had local maxima aloft, except near Malaquite Beach, where the boundary layer was below layer 10 (700m) since the area was mostly above water. Similarly, areas over land with positive vertical velocity in layer 1 also had rising air in layer 10, but amplified by 1-2 orders of magnitude.

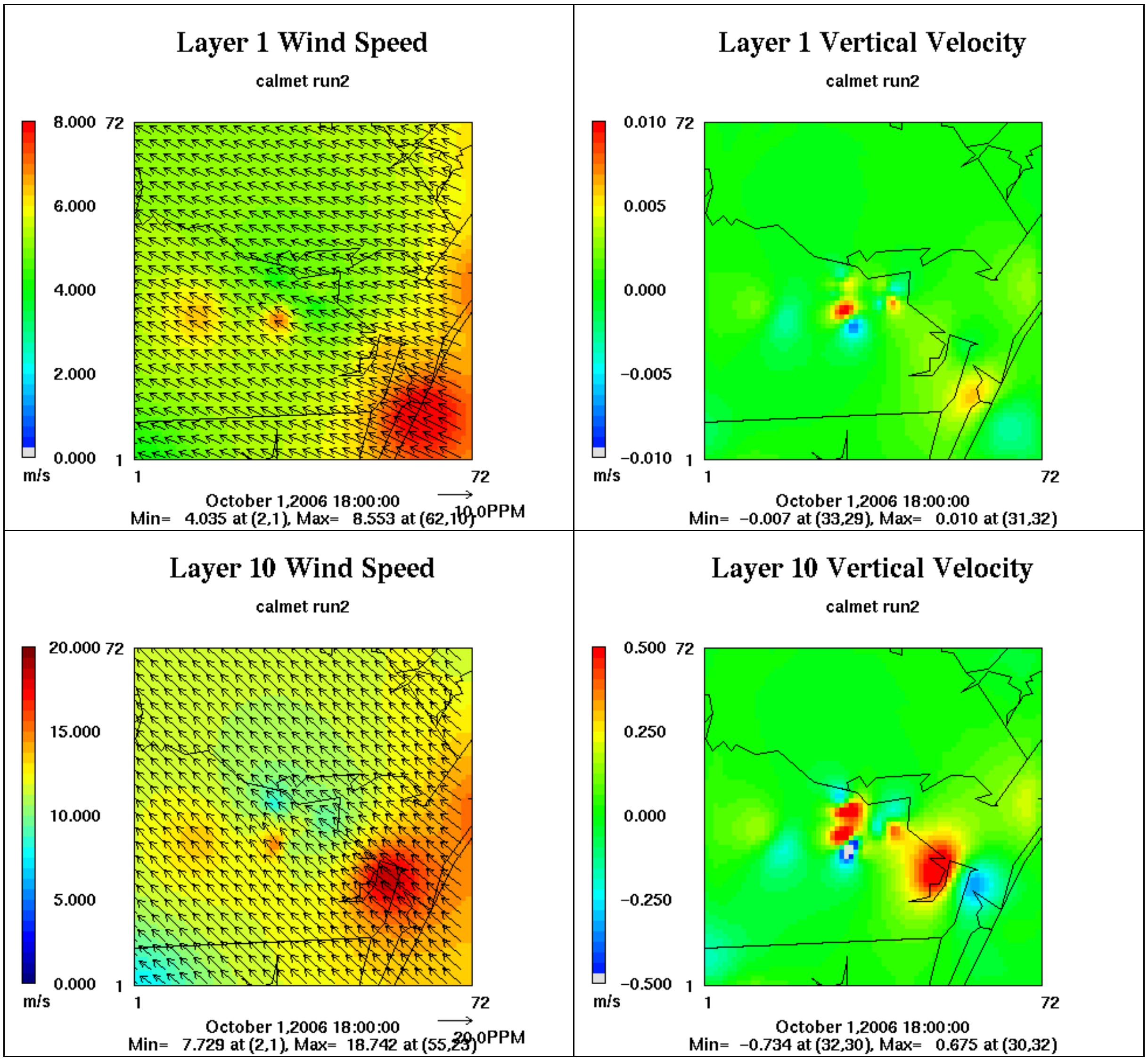


Figure 2-5. Spatial plots of CALMET Run 2 wind and vertical velocity fields in layers 1 and 10 at the top and bottom, respectively.

Sensitivity to high-resolution coastline data

A sensitivity test evaluated the impacts when applying high-resolution coastline data into the landuse preprocessors and into CALMET. Run 3 was configured exactly like Run 2, but with improved coastline data.

Figure 2-6 shows the dominant landuse category in each grid cell without(left) and with (right) the high-resolution coastline data. Not only were the coastal and barrier islands much better defined, but the dominant landuse category in some grid cells changed, particularly near Port Aransas, where wetlands changed to water.

Since CALMET treats areas over water differently than over land, the left side of Figure 2-7 compares the diurnal profile of the mixing heights on October 1 over cell (71,36), located near Port Aransas, whose dominant landuse was altered from a wetland to water when adding the high-resolution coastline data. When water was the dominant landuse, the mixing height remained between 300 m and 500 m throughout the day. As a wetland-dominated grid cell, the mixing height was slightly higher at night and early morning, but was much higher – approaching 1100 m – in the daytime.

The right side of Figure 2-7 compares the diurnal profiles of the mixing heights between Runs 2 and 3 at an inland grid cell (20, 50). The mixing heights showed little change inland when adding high-resolution coastline data, as would be expected.

The large difference in mixing heights near some coastal areas led to differences in the wind field, especially aloft during the nighttime. Figure 2-8 displays spatial plots of the wind field from Run 2 (no high-resolution coastline) on the left, Run 3 (with enhanced coastline) in the middle, and the difference in wind speed on the right. The top and bottom show layers 1 and 10, respectively. All plots show the wind field on October 1 at 10PM, when a major difference in the wind field was more pronounced.

In layer 1, the wind fields were very similar except near Port Aransas, where the wind speed in Run 3 is about 0.1 m/s faster than in Run 2. In layer 10, which was above the boundary layer for all hours of the day for grid cells over water, the wind field in Run 3 was somewhat uniform while Run 2 predicted southeasterlies near the coast that were up to 15 m/s faster.

The coastal vertical velocities in layer 10 near the eastern domain in Run 2 were mitigated in Run 3, as shown in Figure 2-9. In Run 2, a circular streak of rising air near the western boundary was also eliminated in Run 3. This streak is most likely attributed to the boundary formed from the 75 km maximum radius of influence aloft from Port Aransas.

Based on the October 1 evaluation, the high-resolution coastline data made numerous improvements to the model and was included in all further sensitivity tests.

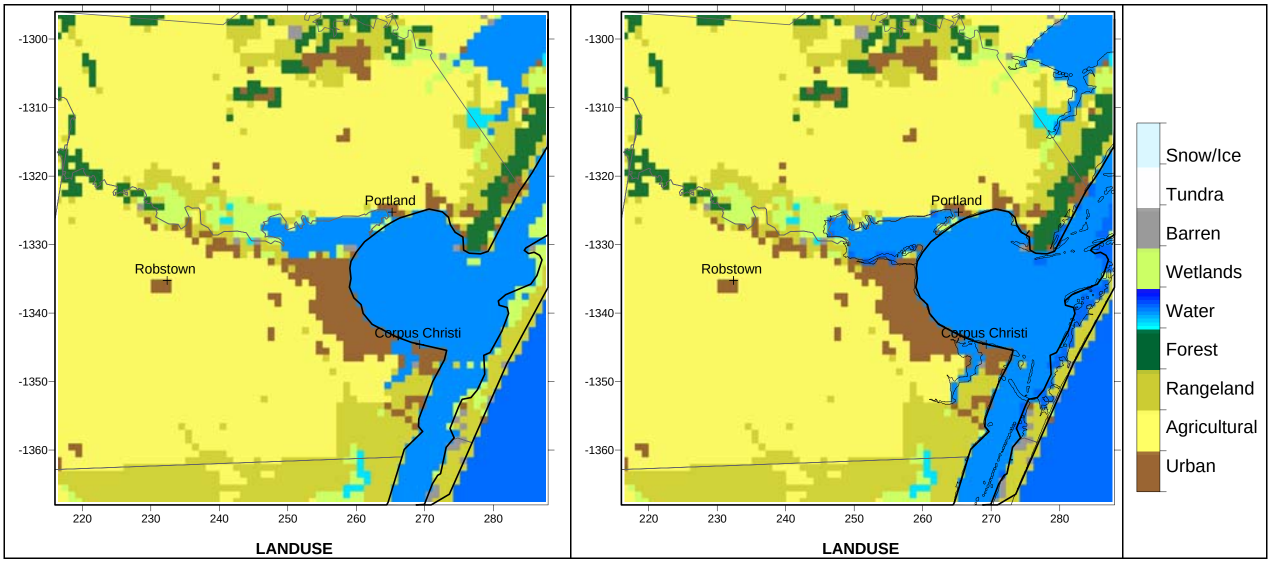


Figure 2-6. Dominant landuse category without (left) and with (right) high-resolution coastline data.

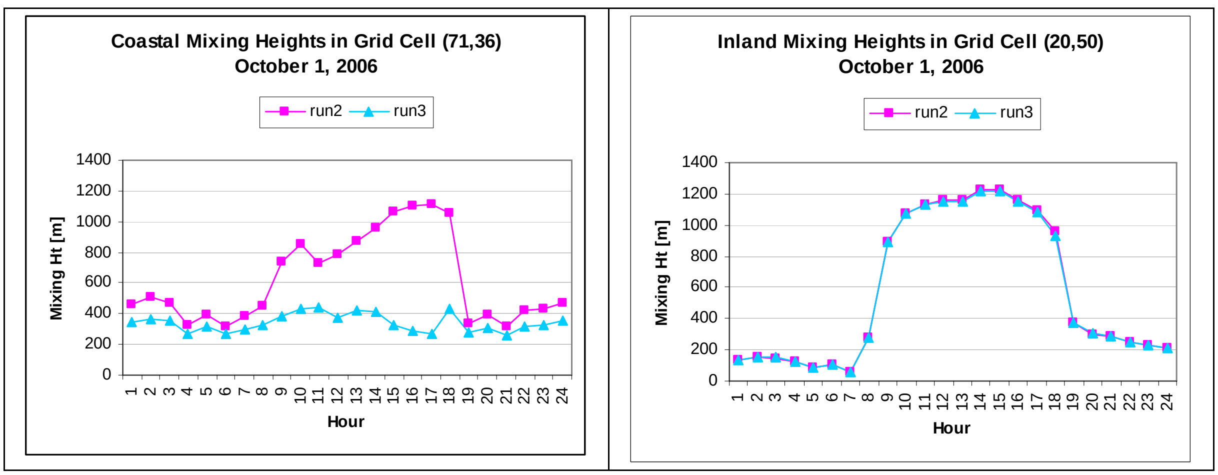


Figure 2-7. Diurnal profiles of mixing heights with and without high-resolution coastline data over two grid cells: near the coast (left) and inland (right).

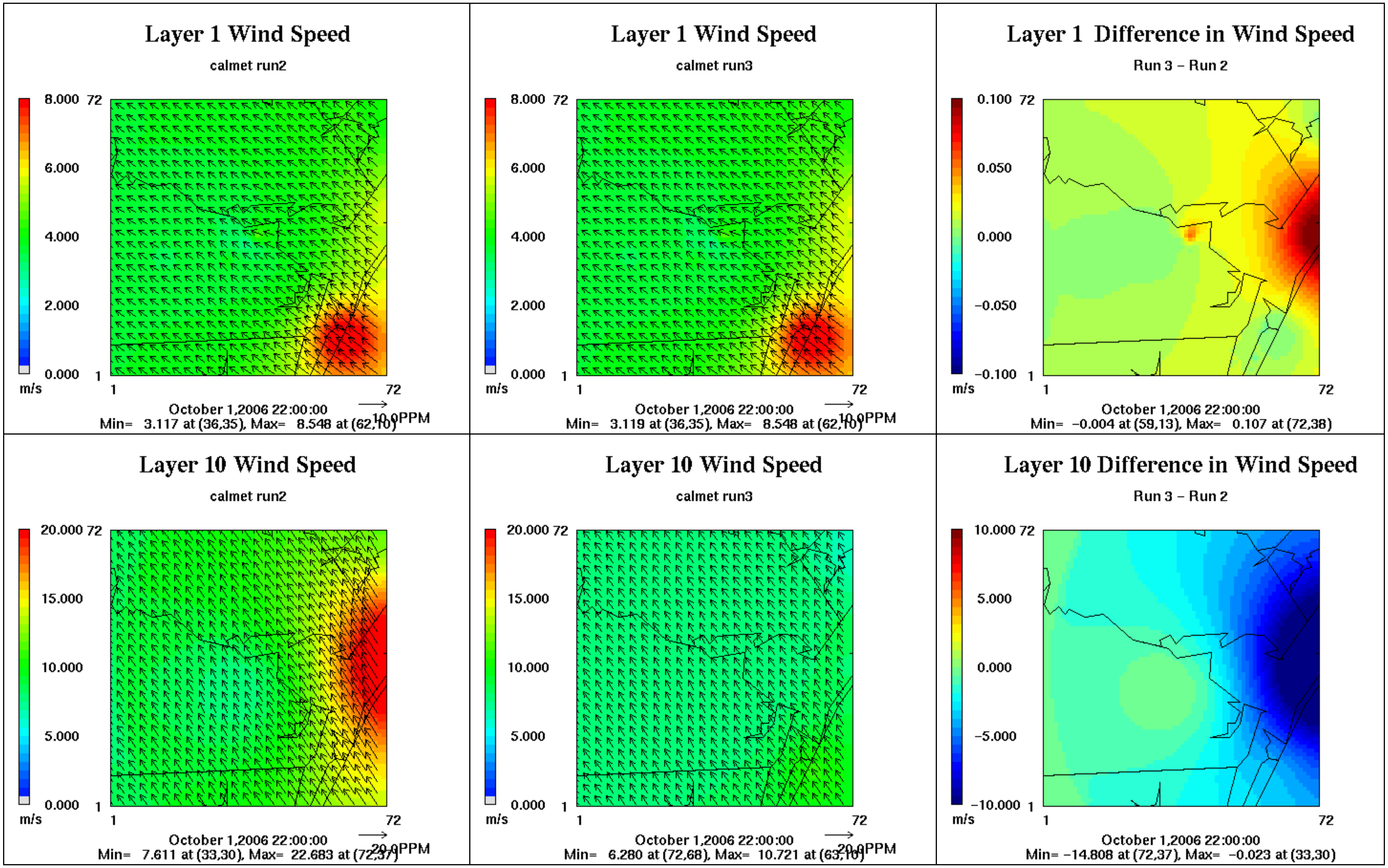


Figure 2-8. Spatial plots of wind fields from Run 2 (left), Run 3 (center), and the wind speed difference (right) for layer 1 (top) and layer 10 (bottom).

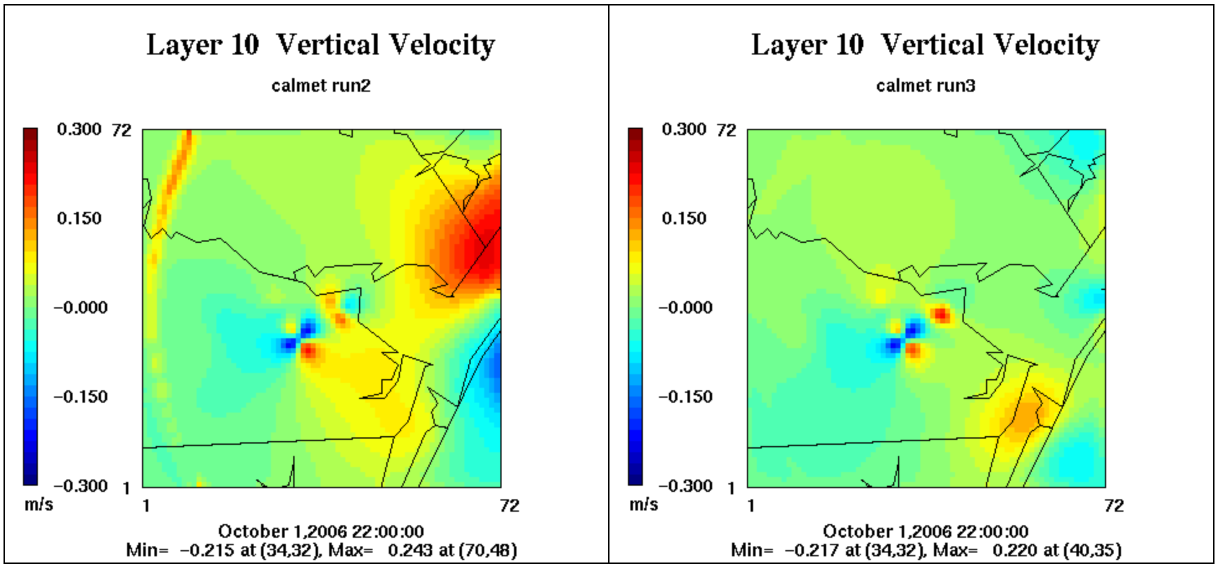


Figure 2-9. Vertical velocity fields from Run 2 (left) and Run 3 (right) in layer 10 at 10 PM on Oct. 1.

Sensitivity to relocated buoy

Buoy 42020 is located 50 nautical miles southeast of Corpus Christi and is relatively distant from the modeling domain. Since wind fields over water should be relatively uniform, Run 4 moved the location of the buoy closer to the domain to increase its influence over water. Run 4 placed the buoy at (300,-1360) – 73 km northwest of its true location, but still outside the domain. Figure 2-10 shows the new location of the buoy. A comparison was made between Run 3, in which the buoy was in its original location, and Run 4. Both runs incorporated the high-resolution coastline data.

Figure 2-11 shows a time series of the layer 1 wind speed over a grid cell in the Gulf (cell (71,2)) between Runs 3 and 4. The stronger influence of the buoy increased the wind speed during most hours of the day; this should be expected since wind speeds are generally faster over water than over land because of less friction. The greatest difference occurred at 9PM (hour 21).

Spatial plots of the layer 1 wind field of Run 4 are shown in Figure 2-12 for three consecutive hours from 8 PM to 10 PM. At 8PM and 10PM, a circular area of high wind speed was centered over Malaquite Beach, but was not present at 9PM because the wind observations at this site were not available. Since CALMET is a diagnostic model, the wind field does not take into account wind data from the previous hour. Without the influence of the NWS Malaquite Beach observations at 9PM, impacts from the buoy should be more pronounced.

Figure 2-13 compares the wind fields in layer 1 at 9PM when relocating the buoy. Run 4 wind speeds in the Gulf were almost 1 m/s faster when moving the buoy closer to the domain. The relocation of the buoy should improve the wind field in the Gulf with little impact over land; this option was used in all subsequent runs.

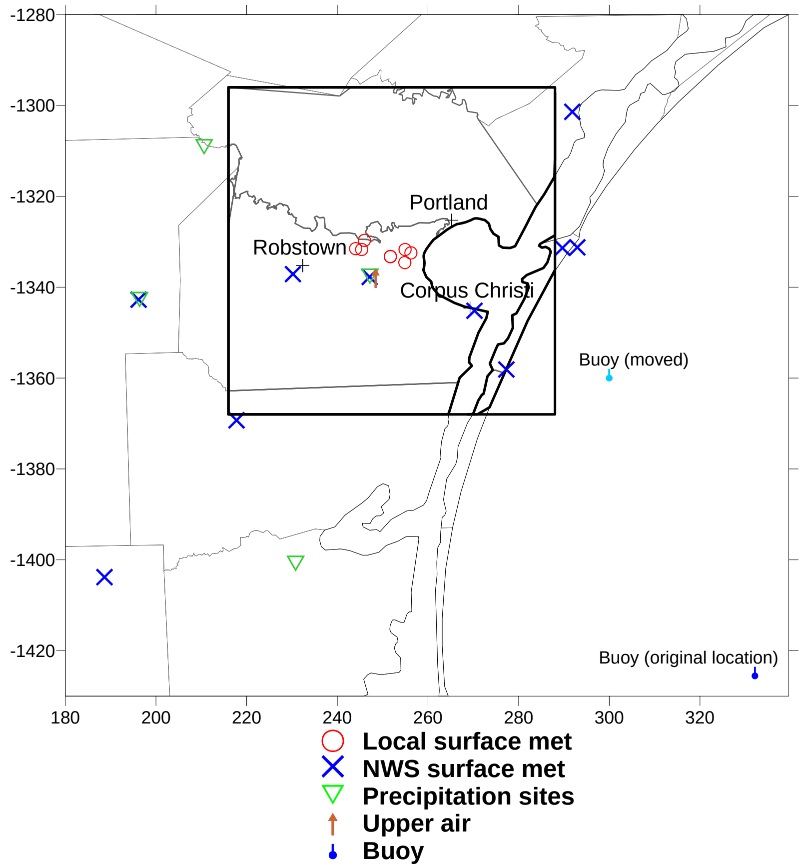


Figure 2-10. Revised locations of the meteorological stations in and surrounding the Corpus Christi domain.

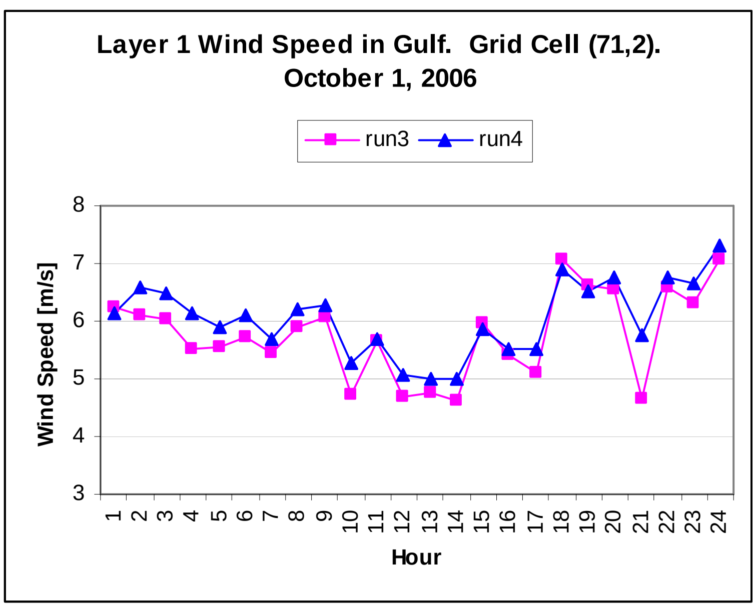


Figure 2-11. Time series of the wind speed in a grid cell in the Gulf before (Run 3) and after (Run 4) relocating the buoy.

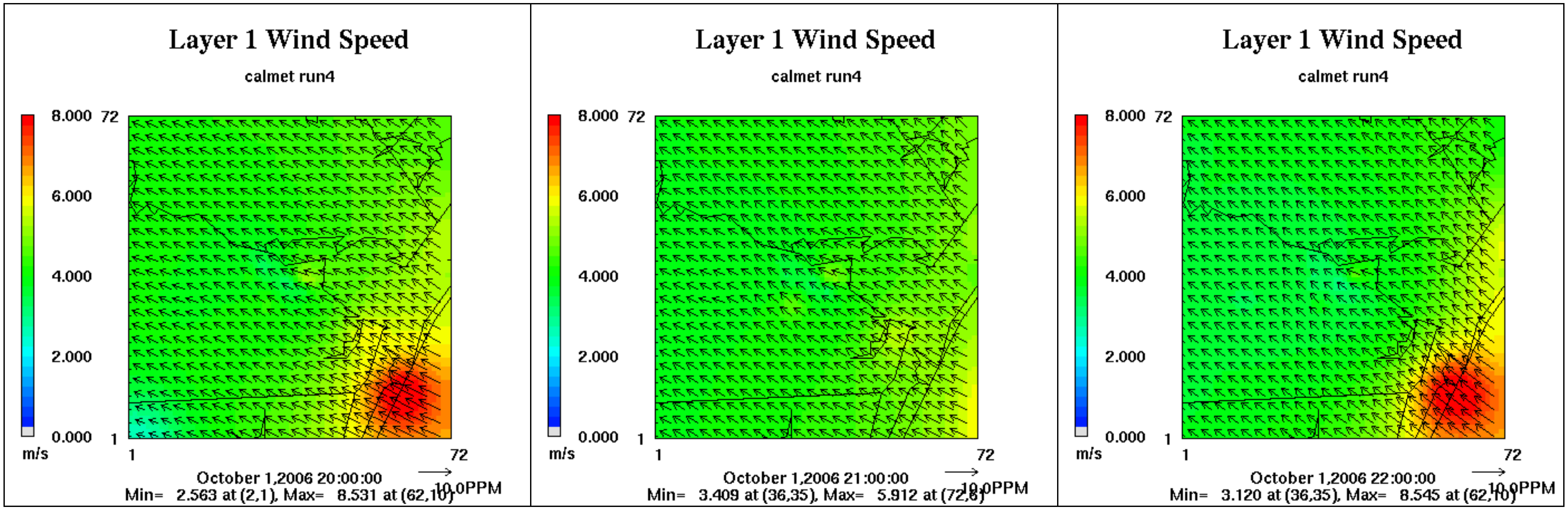


Figure 2-12. Spatial plots of the wind field from Run 4, layer 1 from 8PM to 10 PM.

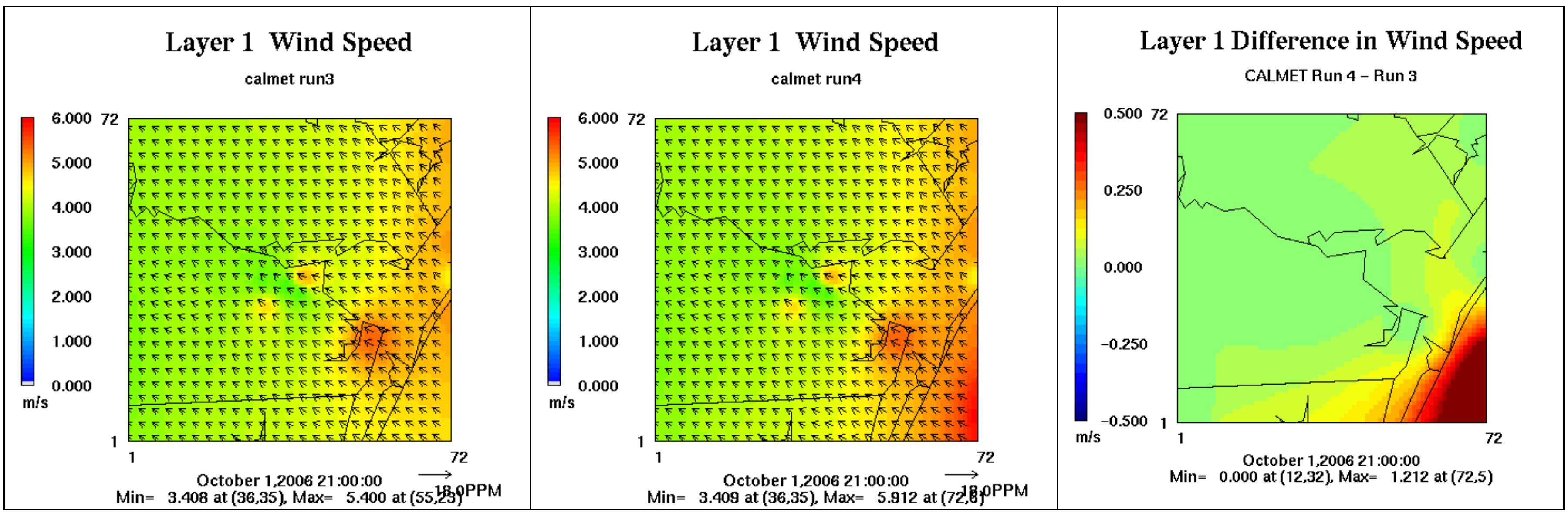


Figure 2-13. A comparison of layer 1 wind fields from Run 3 (left), Run 4 (relocated buoy, middle), and the difference in wind speed (right)

Sensitivity to the O'Brien Vertical Velocity Adjustment

A sensitivity test was performed to evaluate the impacts from activating the O'Brien vertical velocity adjustment scheme. Run 5 was configured exactly like Run 4, except the IOBR flag was turned on.

In Run 4, the vertical velocity exceeded 2 m/s west of Oso Bay at the 3 km height level, which was too high. The O'Brien scheme caps the vertical velocity at the top of the model domain to 0 m/s for all grid cells and hours, as shown in Figure 2-14. If the vertical velocity in a grid cell at the top of the model is positive, all vertical velocities in the associated vertical column will be reduced in the adjustment. Conversely, if air is sinking at the top of the model, the vertical velocities in all layers beneath the grid cell will be increased. Horizontal winds are adjusted to compensate for the change in vertical velocity.

Figure 2-15 provides two examples of the O'Brien adjustment. The top pair of plots shows vertical profiles of the vertical velocity and wind speed on the left and right sides, respectively, over a grid cell near the Port of Corpus Christi (grid cell (31,38)). The dark blue lines represent Run 4, which has no O'Brien adjustment; Run 5, shown in pink, uses the O'Brien adjustment. In Run 4, vertical velocity was positive in all layers. The O'Brien adjustment reduced the vertical velocity in all layers, particularly aloft, but maintained a positive vertical velocity in all layers. To compensate, the horizontal wind speed increased an average of 1.5 m/s in each layer.

In the second example, shown at the bottom of Figure 2-15, a grid cell over the residential area of Corpus Christi was selected. The vertical velocity in Run 4 increased with height in all layers, approaching 2 m/s at the top of the domain. Like the grid cell near the Port, the O'Brien scheme reduced the vertical velocity in all layers. Vertical velocity in the top layers was reduced almost an order of magnitude; in the boundary layer, vertical velocity changed from positive to negative. The horizontal wind speed was reduced in all layers, unlike the column over the Port of Corpus Christi.

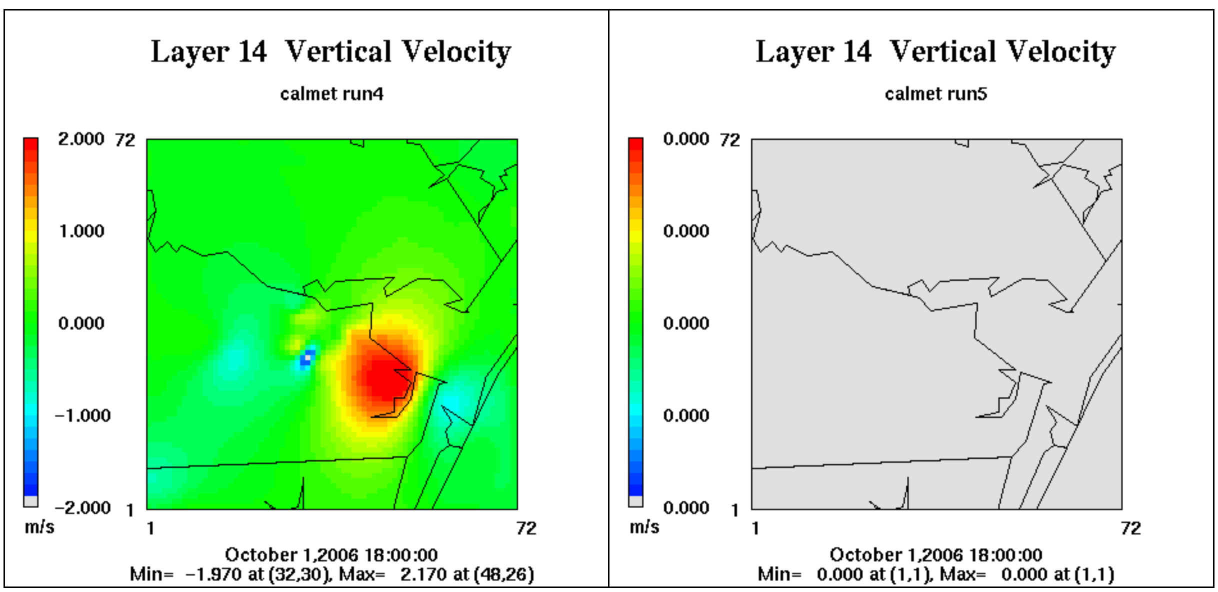


Figure 2-14. Vertical velocity fields at the top of the domain in Run 4 (left) and Run 5 (right).

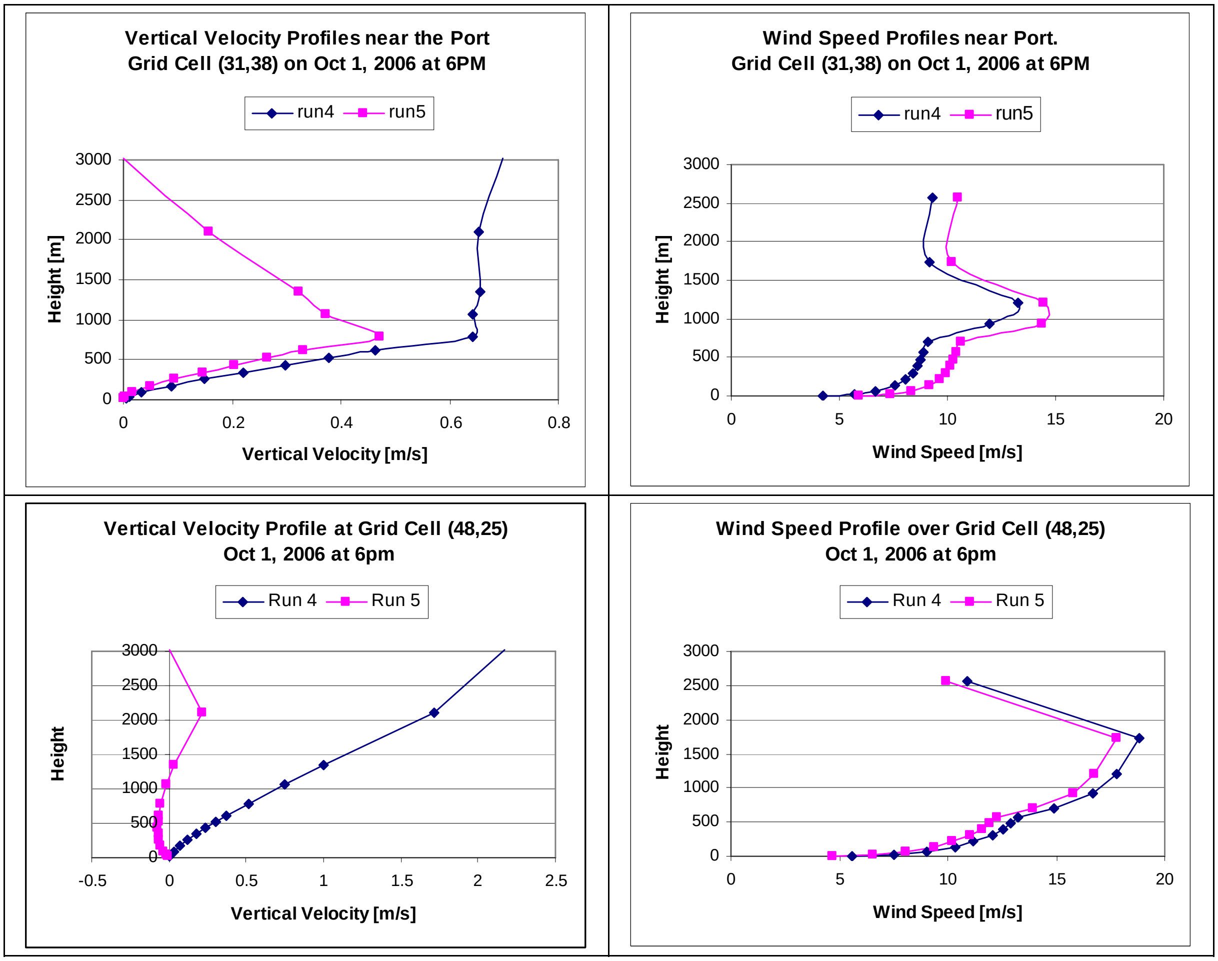


Figure 2-15. Vertical profiles of vertical velocity and wind speed near the Port of Corpus Christi (top) and in the urban area of Corpus Christi (bottom).

Spatial plots of the change in mixing height at 6PM when applying the O'Brien adjustment are shown in Figure 2-16. Mixing heights near the coast were up to 500 m lower with the O'Brien scheme, mixing heights closer to the Port of Corpus Christi were higher.

Figure 2-17 compares the spatial plots of the wind fields and vertical velocities in the top and bottom rows, respectively, for layer 1 without the adjustment (Run 4, left), with the adjustment (Run 5, middle), and their differences (right). The O'Brien adjustment appeared to make a new circulation in which the sea breeze near the coast weakened by up to 3 m/s in layer 1, and increased up to 2.6 m/s further inland.

West of Oso Bay (in the urban part of Corpus Christi), the O'Brien adjustment turned the vertical velocity in layer 1 from positive to negative, helping feed a diverging horizontal wind field in layer 1 in which winds over Corpus Christi shifted from southeasterly in Run 4 to faster easterlies in Run 5, while the southeasterlies over Corpus Christi Bay were stronger than in Run 4.

Time series of the observed and predicted layer 1 wind speed (with and without O'Brien) are shown in Figure 2-18 at two sites – Oak Park (C634) and Corpus Christi Naval Air Station. Oak Park wind speeds almost matched the observed in Run 4 during all hours of the day; the O'Brien adjustment created a 2 m/s over prediction in the afternoon. At the Corpus Christi NAS, Run 4 and Run 5 wind speeds were similar except in the afternoon, when the O'Brien scheme reduced the wind speed about 2 m/s lower than both Run 4 and the observed.

Run 4 generated large vertical velocities aloft. The O'Brien adjustment could lower the magnitudes of these high vertical velocities, but its impact on the horizontal wind field at the surface level was too large. The O'Brien adjustment should not be used.

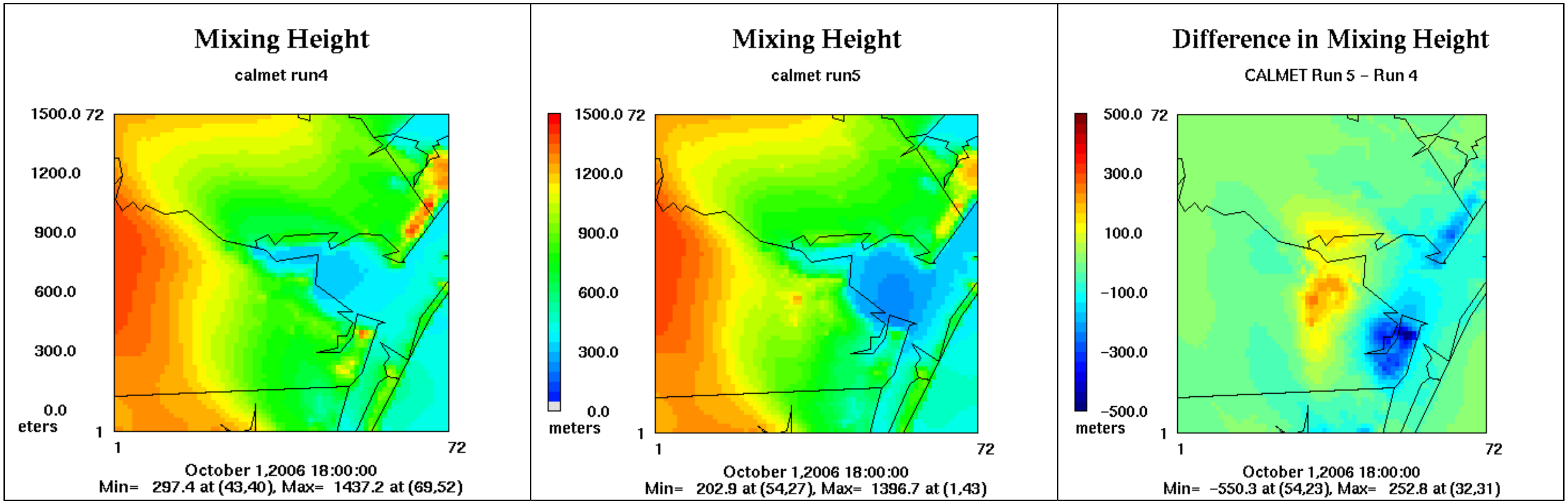


Figure 2-16. Mixing height sensitivity to the O'Brien vertical velocity adjustment at 6PM.

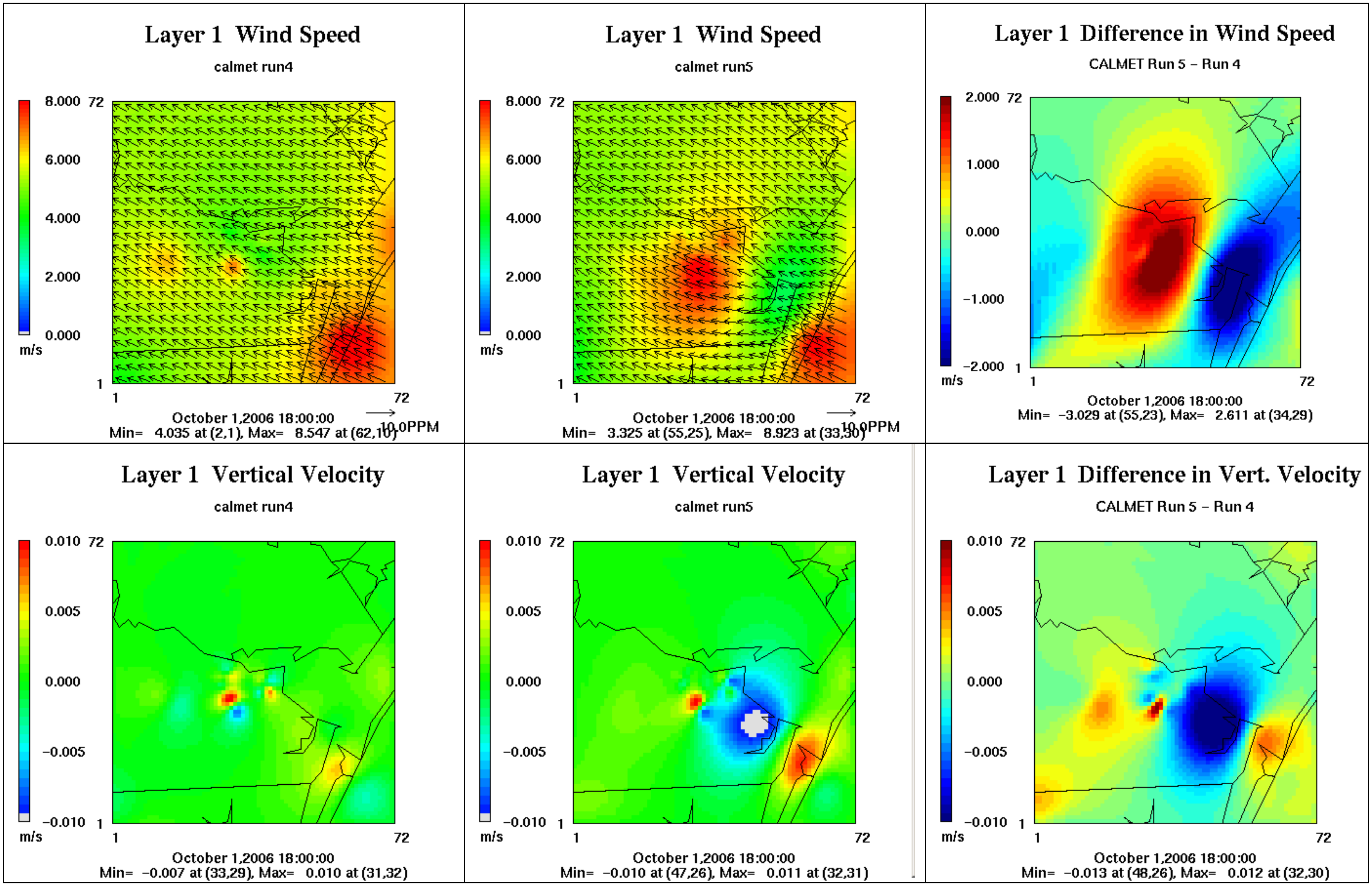


Figure 2-17. Horizontal wind (top) and vertical velocity (bottom) sensitivity to the O'Brien adjustment.

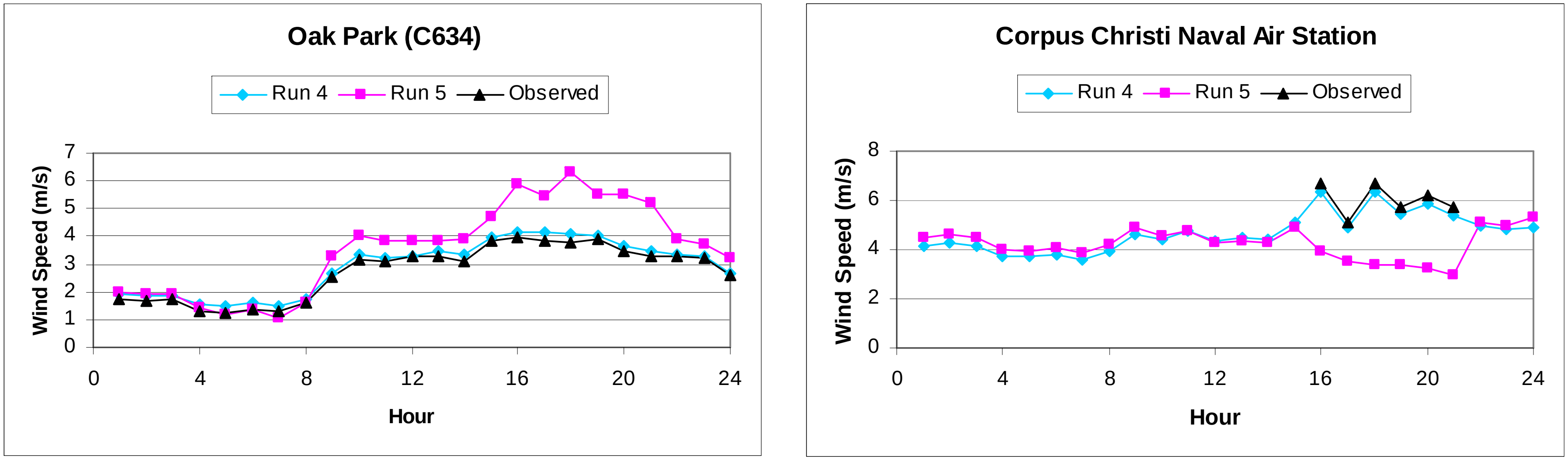


Figure 2-18. Time series of observed and predicted surface wind speeds at Oak Park and Corpus Christi Naval Air Station with and without the O'Brien adjustment.

Sensitivity to terrain kinematics

In Run 6, the flag for the kinematic effects of terrain (IKINE) was activated to examine its impact, even though the domain was relatively flat. The divergence minimization scheme is automatically applied after the kinematics. Results were compared to Run 4.

Kinematic effects to the Corpus Christi wind field were relatively small. Wind speed in layer 1 was reduced a few tenths m/s over the Gulf in most hours and increased slightly inland and in Corpus Christi Bay, as shown in the top left plot in Figure 2-19.

Vertical velocity changed no more than 0.002 m/s in all hours and grid cells in layer 1 on October 1. Three areas where the layer 1 vertical velocity was higher were over water near the eastern boundary, shown in the top right plot of Figure 2-19. These differences were amplified in layer 10, as can be seen in the bottom right plot of Figure 2-19.

Figure 2-20 plots the vertical velocity fields of layer 10 without kinematics (Run 4, left) and with kinematics (Run 6, right). Without kinematics, localized sinking air was predicted over the three areas over water. With kinematics, the sinking motion was mitigated. There was no obvious reason to have local minima in the vertical velocity fields over water; therefore, terrain kinematics is a recommended option in CALMET.

Kinematics also suppressed the rising air over Malaquite Beach in layer 10. Kinematics had minimal impact near the Port of Corpus Christi.

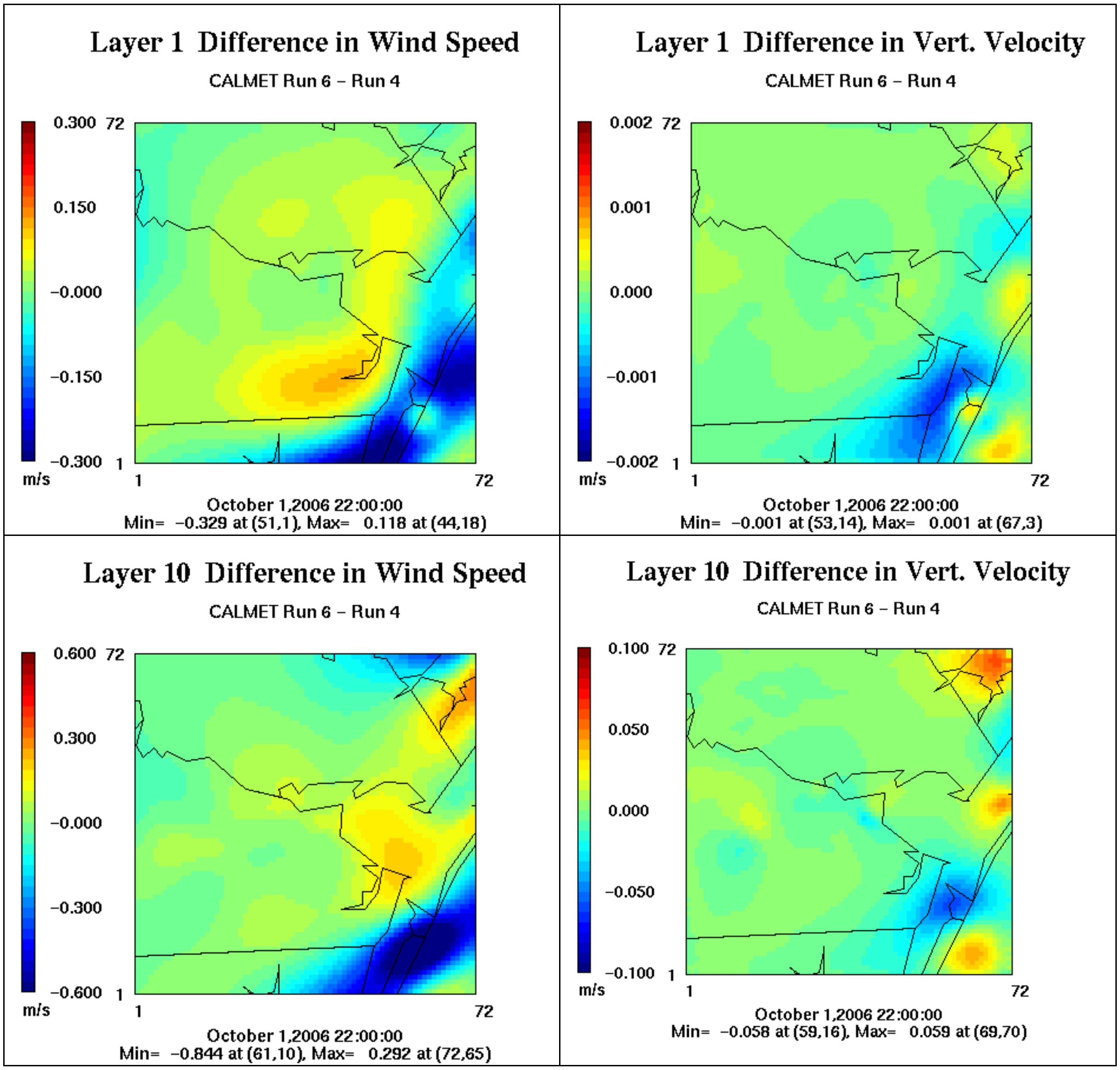


Figure 2-19. Differences in wind speed (left) and vertical velocity (right) in layer 1 (top) and layer 10 (bottom) when accounting for kinematic effects of terrain.

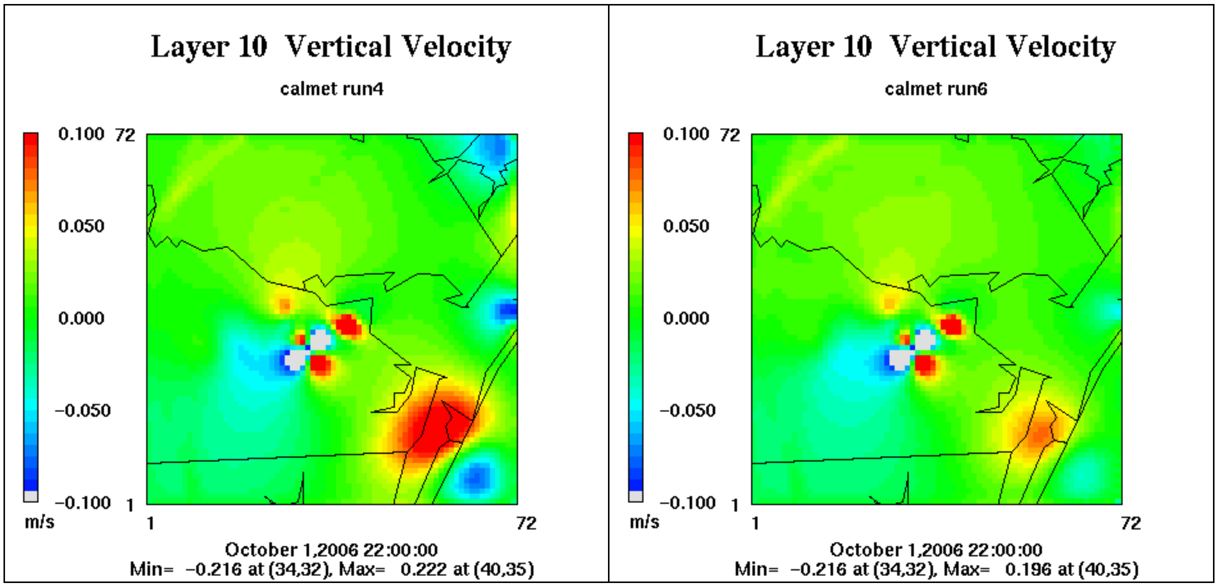


Figure 2-20. Vertical velocity in layer 10 with and without terrain kinematics on the right and left sides, respectively.

Changing the maximum radius of influence

Two runs evaluated the sensitivity to changes in the maximum radius of influence. Run 7 reduced the maximum radius of influence over land in layer 1 from 75 km to 20 km. Run 7a reduced the maximum radius of influence aloft from 75 km to 20 km.

Figure 2-21 compares the wind fields and vertical velocity fields between Run 4, which had a 75 km radius of influence in layer 1, and Run 7, where the radius was reduced to 20 km. Run 4 had a smoother wind field while Run 7 produced faster winds immediately after hitting the barrier islands and coastline, but not over the water areas in between. This pattern occurred often during night and early morning hours. The layer 1 vertical velocity field showed narrow lines of sinking air directly over the coastline and barrier islands to feed the wind speed increase and bands of rising air when transitioning from water to land. Theoretically, wind speed should slow down when hitting land due to increased friction. Figure 2-21 illustrates the opposite.

Run 7 also created partial rings of discontinuities at the boundaries of the maximum radius of influence, such as the land areas surrounding the NWS Port Aransas monitor in the vertical velocity field.

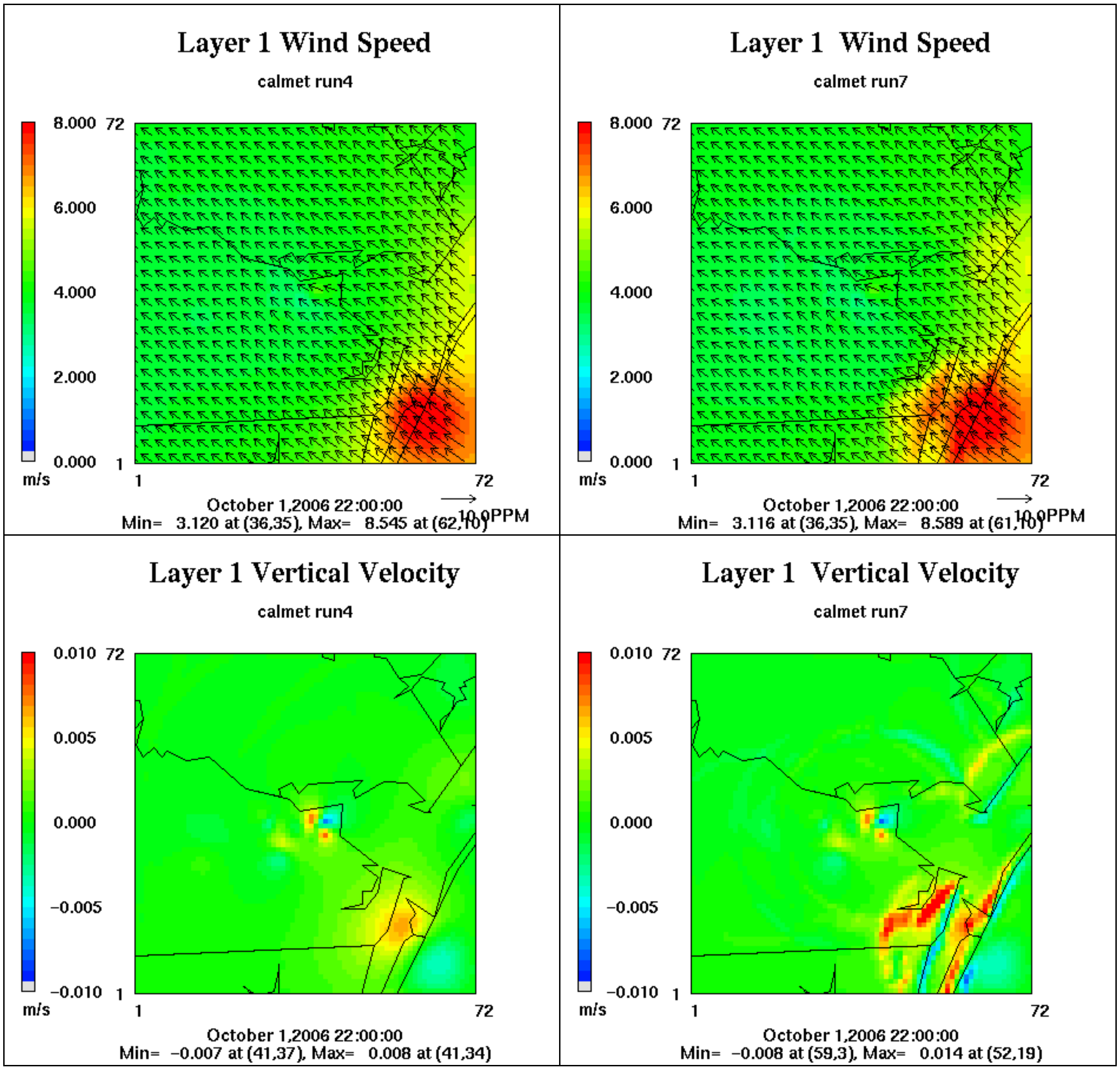


Figure 2-21. Comparison of layer 1 wind and vertical velocity fields when reducing the maximum radius of influence in layer 1.

Similarly, when the radius of influence aloft was reduced to 20 km, "crop circle" discontinuities were apparent in both the horizontal and vertical wind. Figure 2-22 shows the vertical velocity fields from Run 4 and Run 7. A ring of pronounced rising and/or sinking motion in a 20 km radius centered over the Corpus Christi Airport in Run 7 was obviously due to the smaller radius of influence. If the maximum radius of influence is set to a value larger than the domain, such as at 75 km in Run 4, it reduces the chance for these discontinuities to appear inside the domain at both the surface and upper levels.

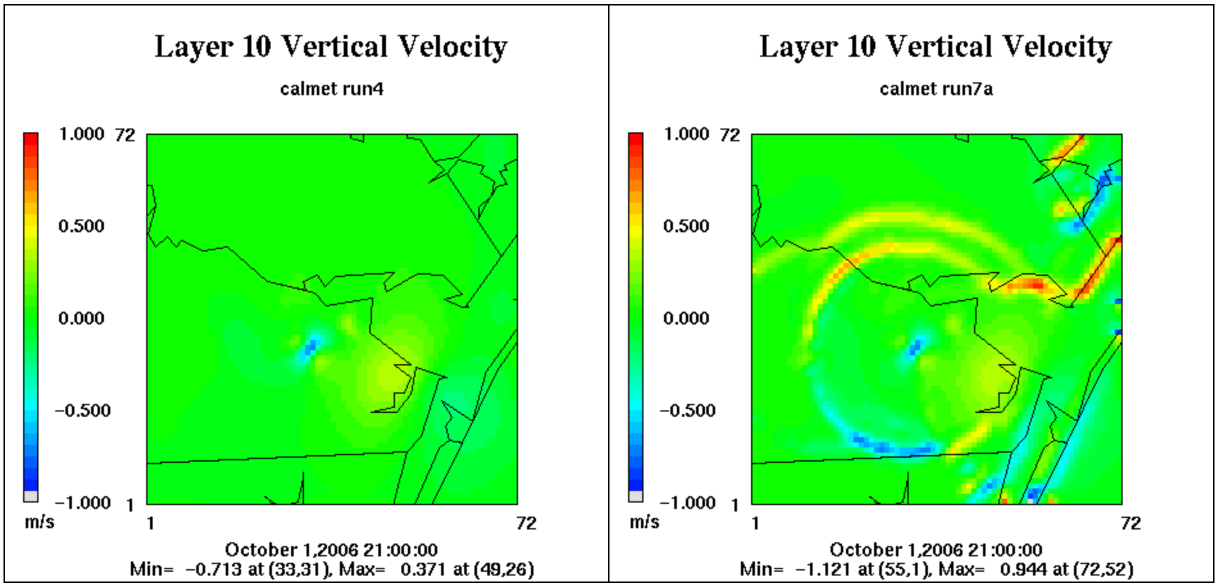


Figure 2-22. Comparison of layer 10 vertical velocity fields when reducing the maximum radius of influence aloft.

Sensitivity to a reduced number of stations to influence each grid cell

There are eight local surface meteorological stations near the Port of Corpus Christi. Run 4 allowed up to 99 stations to be used to interpolate data to each grid cell, weighted by the inverse distance to each observation site. Run 8 reduced the maximum number of stations to 5 to emphasize local differences. A comparison was made between Run 4 and Run 8 to evaluate its impacts.

Figure 2-23 shows the layer 1 and layer 10 vertical velocity fields in the top and bottom rows, respectively, from Run 4 (left) and Run 8 (right) at 6 PM. When the maximum number of meteorological stations was reduced, the domain maximum vertical velocity increased. This would be expected since fewer stations for interpolation leads to less smoothing. Run 8 shows numerous lines of higher (and sometimes lower) vertical velocity in all layers; these lines run in different directions and appear out of place. Therefore, this adjustment is not recommended.

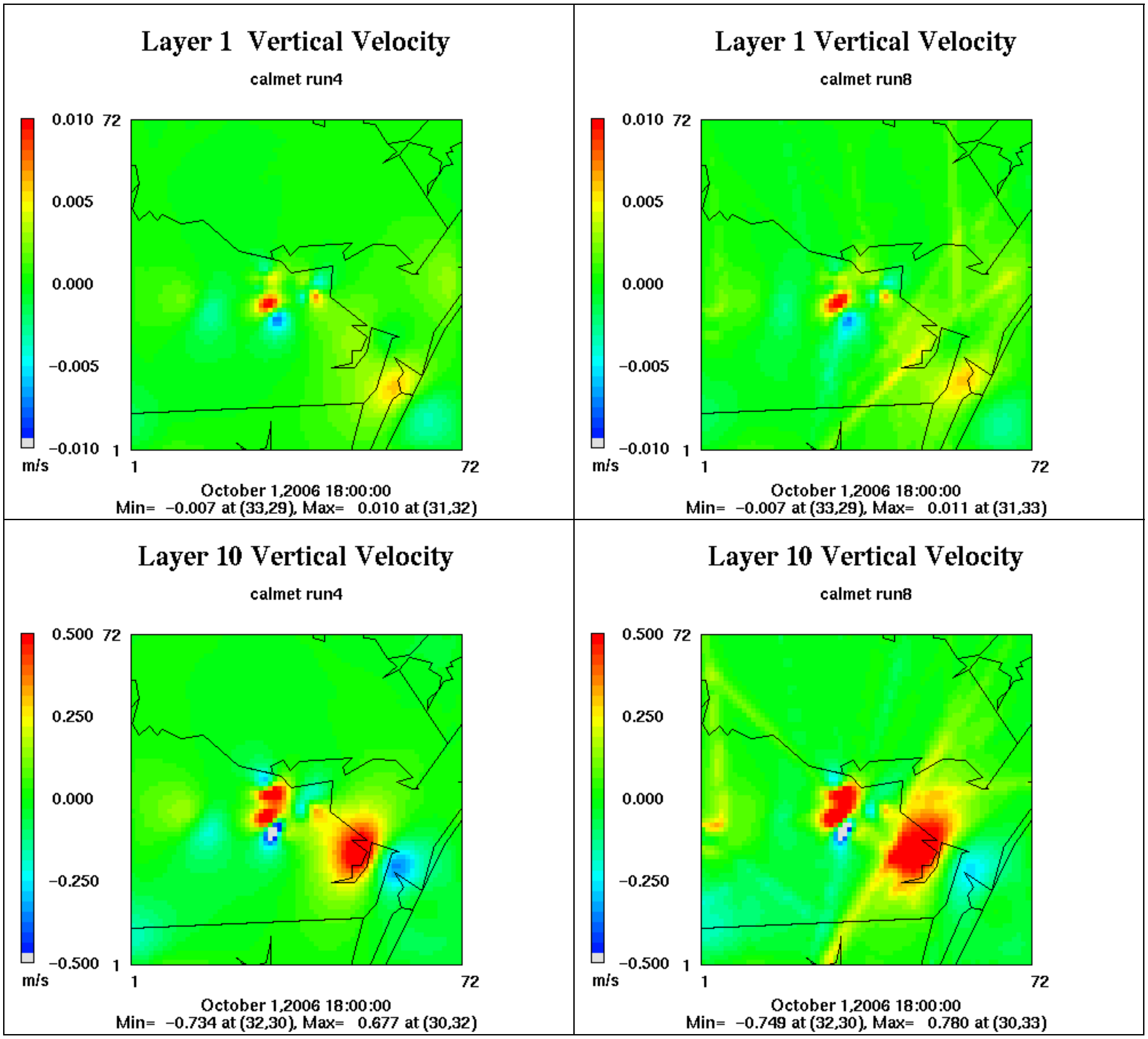


Figure 2-23. Comparison of vertical velocity fields in layers 1 and 10 when reducing the maximum number of stations influencing each grid cell from 99 (Run 4, left) to 5 (Run 8, right)

Implementing the lake breeze option

The lake-breeze option in CALMET allows a user to define a coastline by two points inside a rectangular subset of the domain. The meteorology at a station located a certain distance to the defined coastline would be applied to all locations of the same distance downwind of the coastline in the domain subset. Multiple stations and multiple subsets of coastlines can be defined.

This option was not run successfully. If it were, it is highly likely that discontinuities would form at the edges of each rectangular subset. Therefore, this option was not pursued further.

Sensitivity to a lower radius of influence from terrain

In Run 4, the flag for the radius of influence of terrain, TERRAD, was set to 15 km, which seemed too high for this application. Run 10 reduced TERRAD to 1 km. Run 10 showed almost no change from Run 4. Differences in layer 1 were on the order of 1E-3 m/s for wind speed and 1E-5 m/s for vertical velocity. Figure 2-24 displays spatial plots of the differences in the wind speed and vertical velocity; most differences were west of the Port of Corpus Christi.

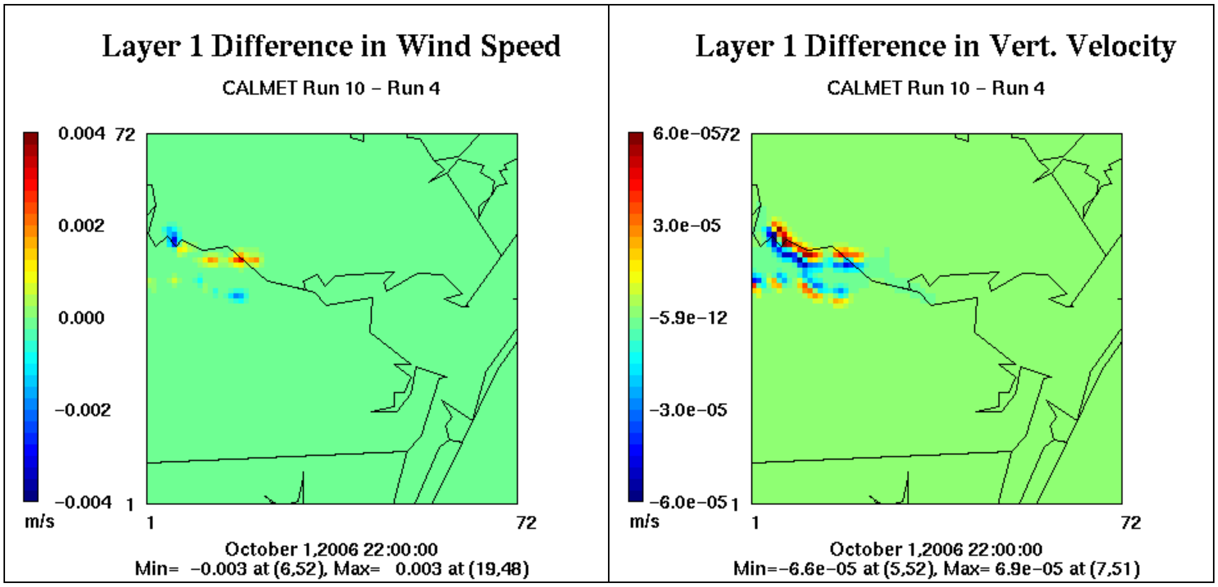


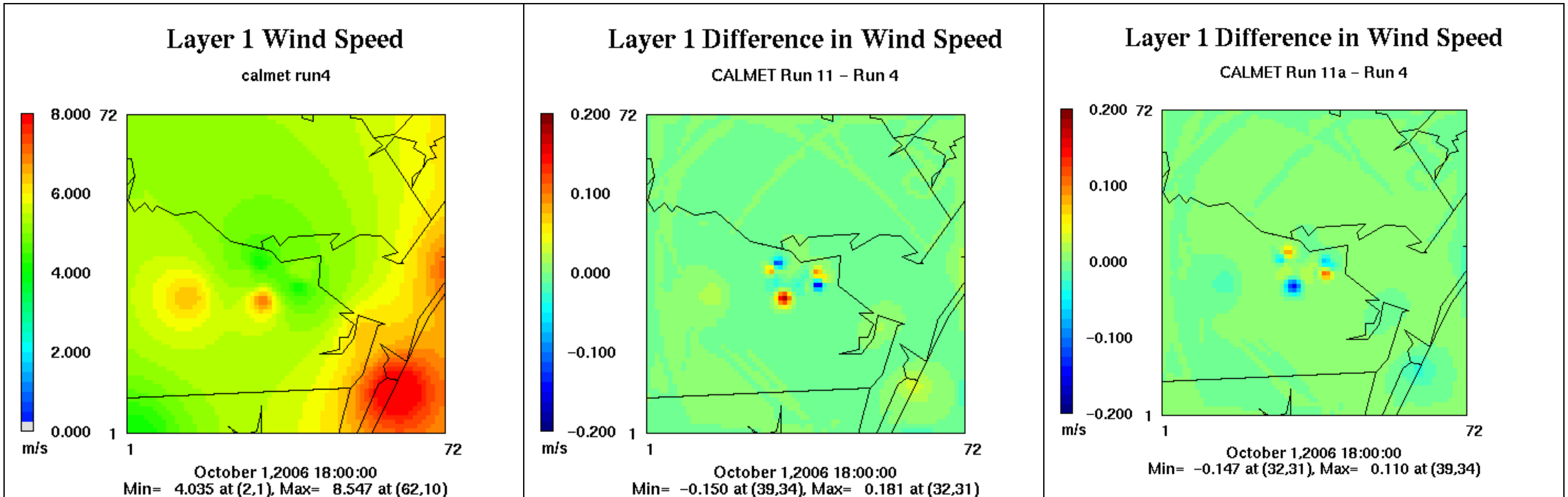
Figure 2-24. Sensitivity to the layer 1 wind speed and vertical velocity when lowering the radius of influence of terrain.

Sensitivity to the number of smoothing passes

CALMET applies a smoothing module to help alleviate local peaks in the wind field. The default number of smoothing passes for each layer is 2 in layer 1 and 4 for all layers aloft, as used in Run 4. Two runs examined the sensitivities to the smoothing module: Run 11 reduced the number of smoothing passes to 1 for all layers, and Run 11a increased the number of smoothing passes to 6 for the top 6 layers in hopes of reducing the peaks in vertical velocity aloft.

Figure 2-25 shows the layer 1 wind speed at 6 PM for Run 4 on the left. The middle and right columns show the differences in the wind field when reducing the number of smoothing passes (Run 11) and when increasing the number of passes aloft (Run 11a), respectively. In Run 4, local maxima in wind speed were predicted at three locations – Robstown, Corpus Christi Airport, and Malaquite Beach. When fewer smoothing passes were applied in layer 1 (Run 11), each of these maxima were enhanced. In Run 11a, the number of smoothing passes in the first layer was the same as in Run 4, but the additional smoothing passes aloft still managed to mitigate the local maxima in layer 1.

In layer 10, the additional smoothing passes aloft in Run 11a helped reduce perturbations in the horizontal wind and vertical velocity fields, especially near the Port of Corpus Christi. The largest differences were on the order of tenths m/s for both horizontal and vertical winds, as can be seen in Figure 2-26. Additional smoothing aloft is recommended.



Run 4 (4 smoothing passes)	Run 11 (1 smoothing pass) – Run 4	Run 11a (6 smoothing passes aloft) – Run 4

Figure 2-25. Spatial plots of sensitivities to the layer 1 wind field when reducing (middle) and increasing (right) the number of smoothing passes.

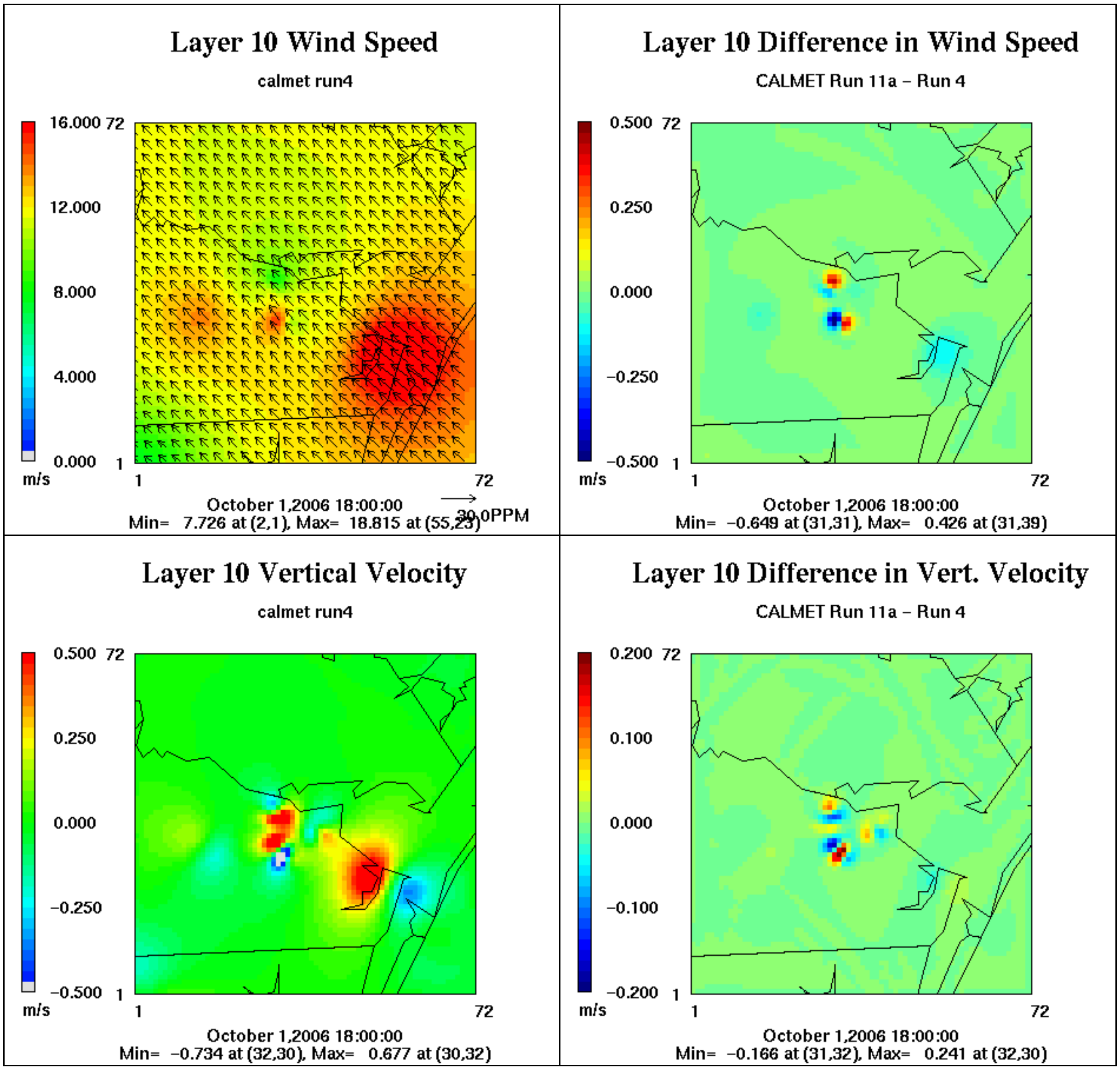


Figure 2-26. Layer 10 wind speed (top) and vertical velocity (bottom) from Run 4 (left) and impacts from additional smoothing passes aloft.

Combination of options

The 14 layer vertical structure, high-resolution coastline data, and relocated buoy were options instated since Run 4. Numerous other CALMET options were compared to Run 4 to examine their impacts. Run 12 combined four options:

- O'Brien adjustment (run5)
- Kinematics (run6)
- Reduce terrain radius of influence (run10)
- Add more sweeps for smoothing aloft (run11a)

Figure 2-27 compares the magnitude of impacts to the wind field in layer 1 using the same color scale for each component at 6 PM on October 1. The O'Brien vertical velocity adjustment had a much larger impact than any of the other components. Kinematics had the second largest impact, followed by additional smoothing sweeps and the smaller radius of influence from the terrain. Due to the strong influence from the O'Brien scheme, Run 12 resembled Run 5.

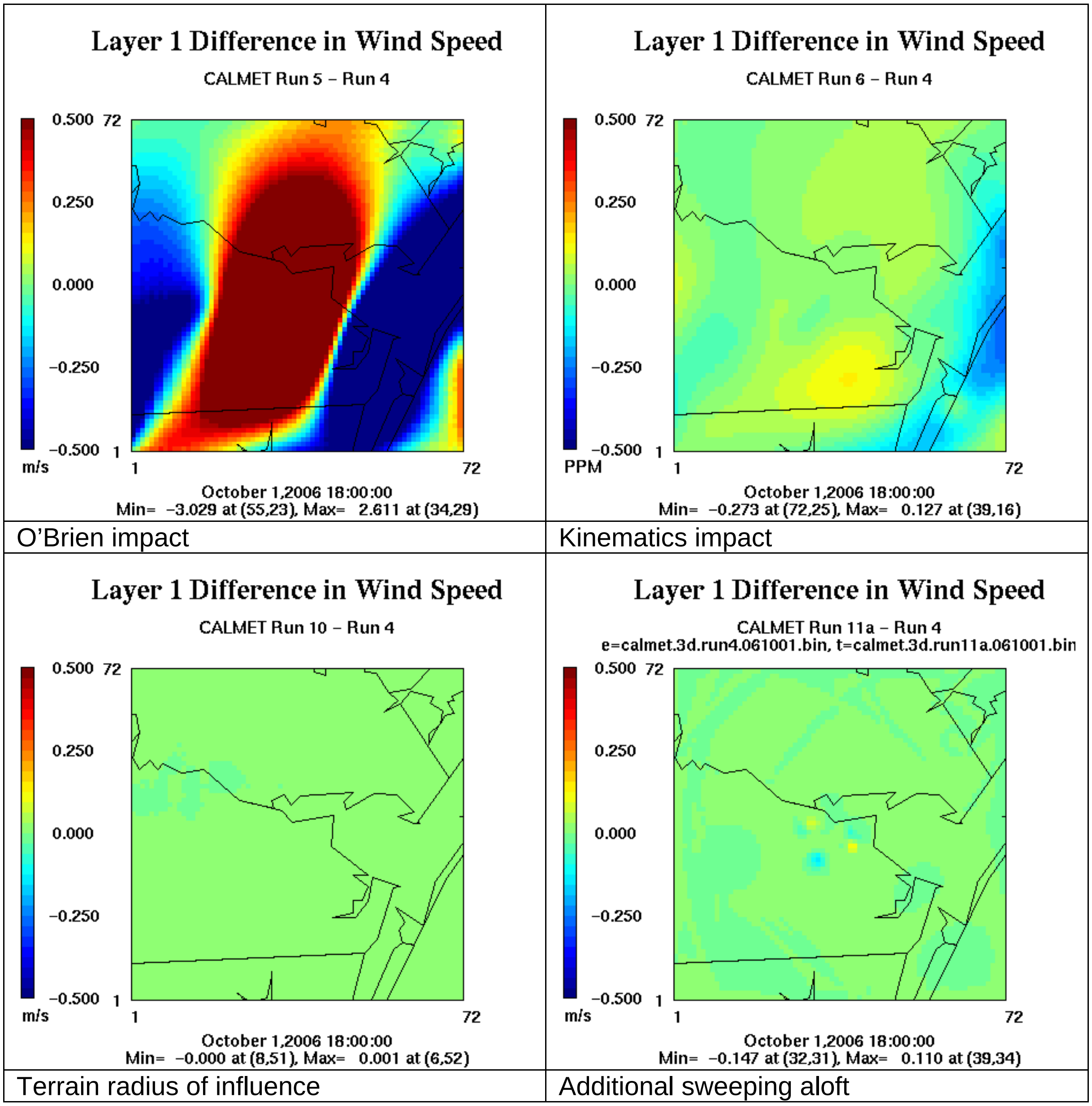
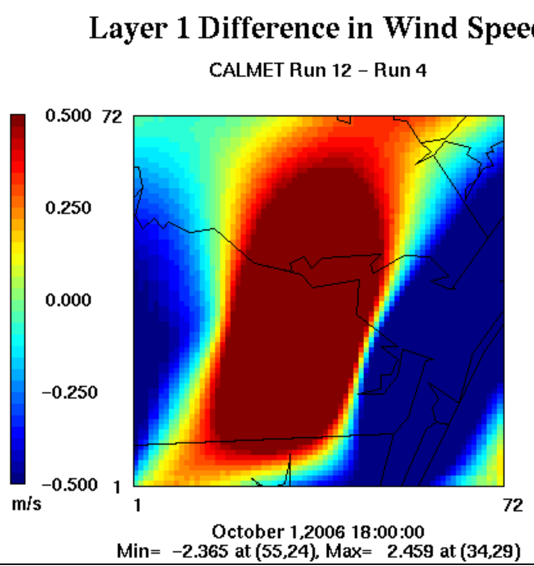


Figure 2-27. Comparison of the magnitude of impacts from each component combined in Run 12.



Combination of options

Figure 2-27. (continued) Comparison of the magnitude of impacts from each component combined in Run 12.

Second combination run

Since the O'Brien vertical velocity adjustment altered the wind field too much, Run 13 was configured exactly like Run 12 but without the O'Brien adjustment. The new configuration consisted of:

- 14 layer vertical structure (run2)
- High resolution coastline data (run3)
- Relocated buoy (run4)
- Kinematics (run6)
- Reduce terrain radius of influence (run10)
- Add more sweeps for smoothing aloft (run11a)

The transformation of horizontal wind fields from Run 2 to Run 13 are shown in Figure 2-28 for layers 1, 10, and 14 (domain top). Similar plots for the vertical velocity are depicted in Figure 2-29. The most prominent improvements to the wind fields occurred along the coast and over the Port of Corpus Christi in layer 10, where the wind field was smoother. Vertical velocity perturbations aloft were mitigated in Run 13, especially over water, but remain high near the top of the modeling domain.

Run 13 was considered the most favorable configuration among all runs evaluated, and was selected to provide the meteorological inputs for the CALPUFF sensitivity tests.

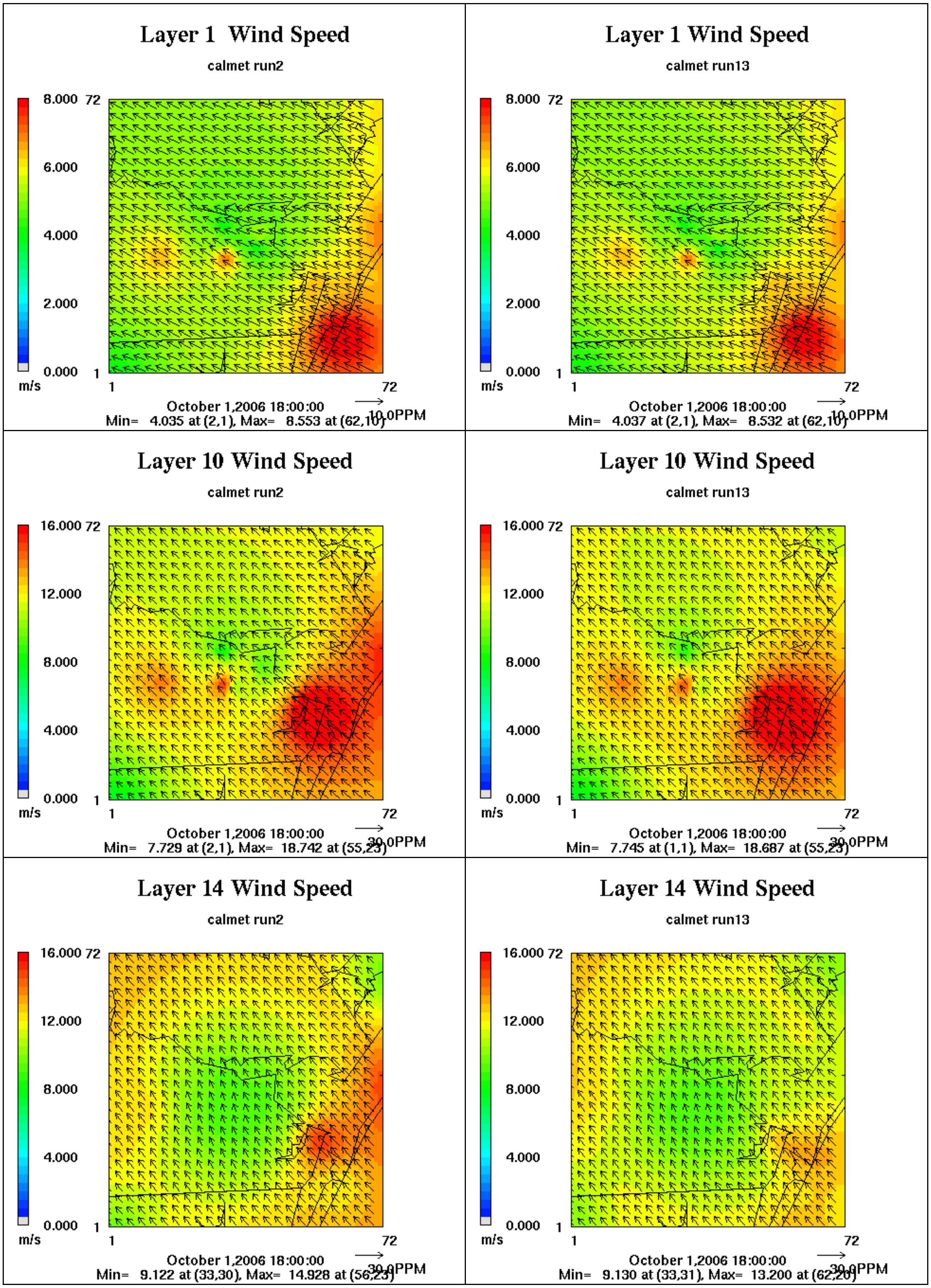


Figure 2-28. Transformation of the wind field from Run 2 to Run 13 in three vertical layers.

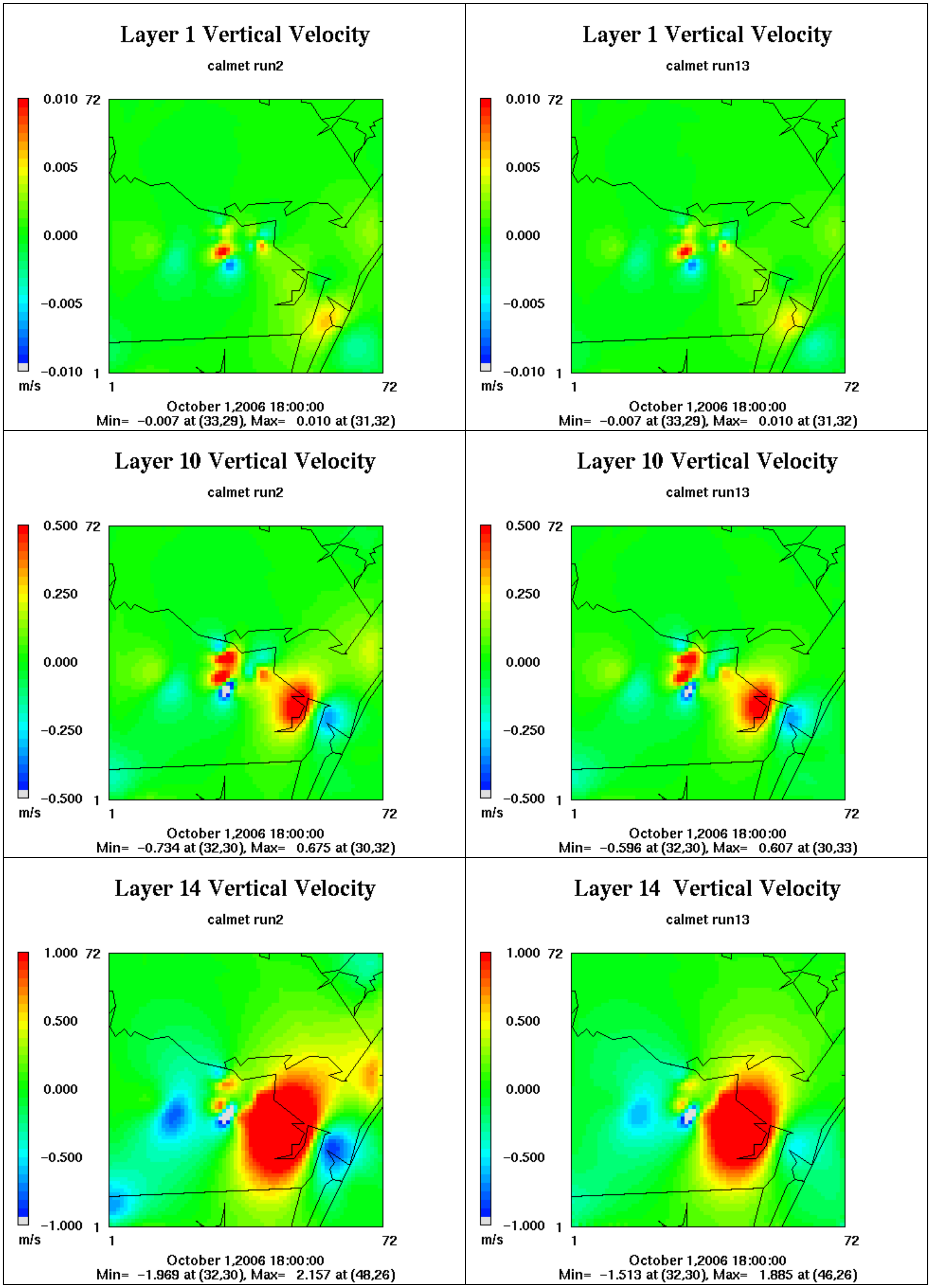


Figure 2-29. Transformation of the vertical velocity field from Run 2 to Run 13 in three vertical layers.

2.4. SUMMARY

CALMET is the meteorological preprocessor to CALPUFF. All available meteorological data near Corpus Christi (18 surface sites, 5 precipitation sites, 1 buoy, and 1 upper air station) were incorporated into CALMET to generate gridded wind and temperature fields. In the initial run, CALMET often produced local maxima or minima over surface meteorological sites, produced wind speeds that were too fast aloft over water at night, and generated vertical velocities that were too big near the top of the domain.

Sensitivity tests were conducted to help address these issues. Results were subjectively evaluated since all meteorological inputs were already used for observational nudging inside the model. CALMET options that helped improve the wind fields included the use of high-resolution coastline data, which reduced night time coastal wind speeds aloft; the repositioning of the buoy closer to the domain, which helped represent over-water data in the domain better; terrain kinematics, which mitigated local peaks in vertical velocity over water; and extra smoothing aloft, which helped reduce the vertical velocity near the top of the domain.

Options that did not improve the wind field included the implementation of the O'Brien vertical velocity adjustment, which helped reduce the vertical velocity more than any other option, but altered the horizontal wind field considerably; the reduction of the maximum radius of influence in all layers, which generated "crop circles", or circular boundaries of discontinuity; and the reduction of the number of stations to influence each grid cell, which created stronger perturbations.

CALMET Run 13 combined all of the favorable options. The wind fields from CALMET Run 13 were applied to CALPUFF for sensitivity tests, detailed in Section 3.

3. CALPUFF MODELING

The CALPUFF dispersion model was used to predict the magnitude of benzene concentrations transported from chemical plants and refineries near the Port of Corpus Christi to nearby populated areas, hospitals, clinics, schools, and universities. The EPA-approved CALPUFF version 5.8 was used.

CALPUFF is a non steady-state Lagrangian puff model based on the Gaussian dispersion equations. CALPUFF can handle complex terrain algorithms, land/water interaction effects, dry and wet deposition, basic chemistry, and building downwash. Inputs include CALMET meteorological fields, emissions, and a list of discrete and/or gridded receptors.

CALPUFF sensitivity tests were first performed to find the most reasonable configuration for the Corpus Christi domain. The most favorable configuration was then used to simulate the full October 1 to November 30, 2006 episode, and to examine the impacts from each of the largest facilities.

3.1. INITIAL CALPUFF RUN

In CALPUFF Run 1, the model was configured with CALMET Run 1 meteorology, benzene point source emissions extracted from the 2002 NEI inventory, and 141 discrete receptors representing populated areas, clinics, schools, hospitals, and universities. This run consisted of 10 vertical layers up to 4 km. Figure 3-1 displays the locations of the emissions and receptors. Run 1 was configured with the default technical options as listed in Table 3-1, unless stated otherwise. The full list of model options can be found in Appendix B.

Benzene dry deposition parameters were obtained from the User's Guide for the Emissions Modeling System for Hazardous Air Pollutants Version 2, as defined in Table 3-2.

The 2002 NEI benzene inventory consisted of 627 point sources within the modeling domain totaling 169 tons per year (tpy), of which the Flint Hills Resources – Corpus Christi West facility emitted over half (87 tpy).

CALPUFF was run from October 1 to November 30, 2006. Model output concentrations had units of $\mu g/m^3$, which were converted to parts per billion (ppb), assuming a temperature of 25C and pressure of 1013.25 mb (1 atm). The highest hourly concentration among all discrete receptors and dates was 78.6 ppb at midnight on November 6. The receptor represented a school near Robstown with LCP coordinates (230.6, -1337.2), which is very close to where NEI placed the Flint Hills West facility. The Flint Hills West location was incorrectly located too far to the west.

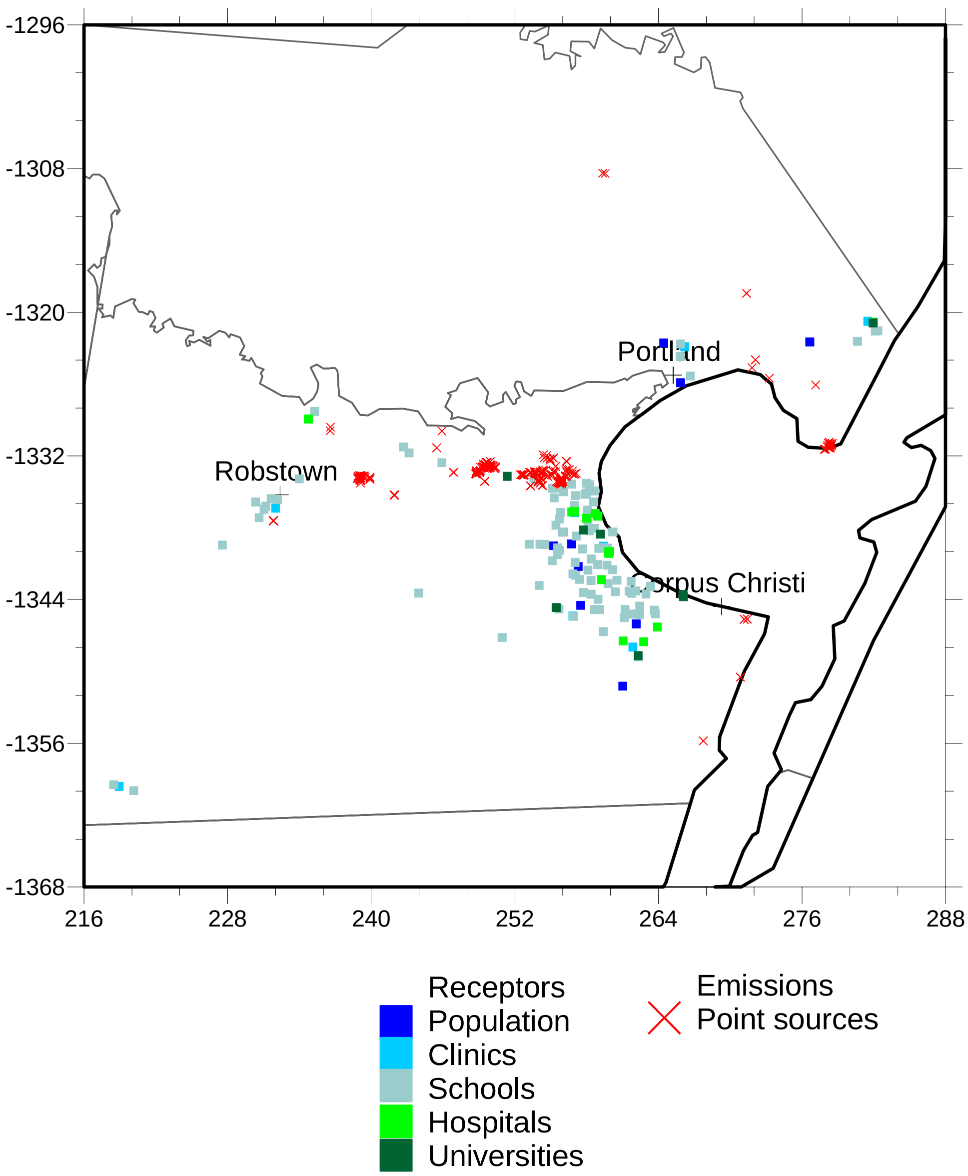


Figure 3-1. Map of discrete receptors and NEI 2002 benzene emission sources.

Table 3-1. CALPUFF technical options.

Description	Variable	Option Selected
Vertical distribution in near field	MGAUSS	1 = Gaussian
Terrain adjustment method	MCTADJ	3 = partial plume path adjustment
Subgrid scale complex terrain	MCTSG	0 = not modeled
Near-field puffs modeled as elongated slugs	MSLUG	0 = no
Transitional plume rise modeled	MTRANS	1 = yes
Stack tip downwash	MTIP	1 = yes
Method for building downwash	MBDW	2 = PRIME method (not default)
Vertical wind shear modeled above stack top	MSHEAR	0 = no

Description	Variable	Option Selected
Allow puff splitting	MSPLIT	0 = no
Chemical mechanism flag	MCHEM	0 = no chemistry (not default)
Wet removal modeled	MWET	1 = yes
Dry deposition modeled	MDRY	1 = yes
Gravitational settling	MTILT	0 = no
Method to compute dispersion coefficients	MDISP	3 = PG dispersion coefficients
PG sigma-y,z adjustments for roughness	MROUGH	0 = no
Partial plume penetration of elevated inversion	MPARTL	1 = yes
Strength of temperature inversion from PROFILE.DAT	MTINV	0 = no (computed from measured/default gradients)
PDF for dispersion when convective	MPDF	0 = no

Table 3-2. Benzene deposition properties.

Property	Parameter
Diffusivity	0.0896 cm2/s
Solubility enhancement factor	1.0
Reactivity	0-10 – set to 0 in this study
Mesophyll resistance	16,382 s/cm
Henry’s Law coefficient	0.2287

3.2. CALPUFF SENSITIVITY TESTS

Sensitivity tests were performed on CALPUFF to identify the configuration that appeared to be the most scientifically sound. Each sensitivity test was performed on October 1 and 2, 2006 using CALMET Run 13. October 1 was treated as a model spin-up period; October 2 was used to compare benzene concentrations at both the 1-km resolution gridded receptors and the 141 discrete receptors. Winds were predominantly from the southeast.

Sensitivity tests examined the following:

- Revised vertical layer structure
- New emissions from the 2005 TCEQ Photochemical Modeling EI
- Using slugs
- Micrometeorological variables to compute the dispersion coefficients
- Adding puff splitting
- Allowing vertical wind shear above stack tops
- Incorporating surface roughness when computing Pasquill-Gifford dispersion coefficients

Sensitivity to new meteorology

CALPUFF Run 1a was configured exactly like Run 1 except CALMET Run 13 meteorology was used, which was based on a 14-layer vertical layer structure instead of the 10 layers used in Run 1. In addition to the discrete receptors, gridded receptors at 1 km resolution were also output. The benzene emissions were from the 2002 NEI inventory.

Table 3-3 lists the receptors with the five highest hourly benzene concentrations among the discrete receptors on October 2 from CALPUFF Runs 1 and 1a. The top 5 concentrations in Run 1 were at the same locations as in Run 1a. All five of these receptors were located downwind of the incorrectly-located Flint Hills West facility.

All improvements to CALMET between Run 1 and Run 13 made little difference to the 1-hour maximum concentration, increasing 0.32 ppb to 38.75 ppb. The second highest concentration showed a greater change, dropping 3.2 ppb to 29.4 ppb in Run 1a.

Table 3-3. Largest hourly benzene on October 2, 2006 from CALPUFF Run 1 and Run 1a.

Rank	Run 1 Conc [ppb]	Run 1a Conc [ppb]	Receptor
1	38.43	38.75	63 (230.63, -1337.16)
2	32.64	29.40	74 (231.06, -1336.46)
3	4.41	4.83	27 (231.19, -1336.21)
4	4.36	4.42	16 (232.01, -1336.35)
5	2.42	2.10	51 (230.35, -1335.86)

Sensitivity to emissions from the 2002 NEI vs. 2005 TCEQ Photochemical Modeling inventories

Since the NEI inventory placed the largest contributor of benzene emissions in the incorrect location, Run 2 used the 2005 TCEQ Photochemical Modeling inventory instead of the 2002 NEI inventory used in Run 1a. Table 3-4 lists the 2005 TCEQ Photochemical Modeling inventory benzene emissions by facility, ranked by the rate of emissions. The total benzene emitted in the Corpus Christi domain was 256 tpy – almost 50% more than in the NEI inventory.

Figure 3-2 plots the location of each emission record coded by facility. Larger facilities had their own color and/or symbol. All emissions from facilities emitting less than 3.0 tpy are shown in grey.

Emissions from Flint Hills Resources LP and Citgo Refining & Chemicals Company were reallocated based on a spatial distribution. Flint Hills Resources LP, represented by the red circles in Figure 3-2, is shown again in Figure 3-3 without any other facilities. Three distinct clusters were observed; therefore, Flint Hills needed to be split into three facilities. All points west of 250 km were assigned to Flint Hills West (65.56 tpy), which was much closer to the Port of Corpus Christi than in the NEI inventory. All points east of 260 km were located in San Patricio County and were named Flint Hills San Patricio (1.08 tpy). In between, the remaining points were assigned to Flint Hills East (0.25 tpy).

The 2005 Photochemical Modeling EI had already split Citgo into three separate facilities -- Citgo West (dark green circle in Figure 3-2), Citgo Deep Sea Terminal (grey plus), and Citgo East (light pink circle), differentiated by the first two letters of the facility identification of CW, CD, and CE, respectively. Figure 3-4 plots the locations of each Citgo point source. Several

Citgo East emission records were found closer to the Citgo West facility than Citgo East; these points, totaling 0.70 tpy, were reclassified as part of Citgo West. Citgo East's revised benzene emissions was 45.37 tpy; Citgo West was increased to 7.55 tpy benzene.

Figure 3-5 plots the revised total benzene emissions by facility, scaled by the magnitude of the emission rates. The five largest emitters – Flint Hills West, Valero East, Citgo East, Valero West, and Koch Petroleum – are all concentrated on the north side of Nueces County along the inner Corpus Christi Bay, and account for over 80% of the total benzene emissions. These five facilities are highlighted in orange in the plot; their revised totals are listed in Table 3-5.

Table 3-4. Benzene emissions by facility in the 2005 TCEQ Photochemical Modeling inventory.

Rank	Facility Name	Emission [tpy]
1	FLINT HILLS RESOURCES LP	66.90
2	VALERO REFINING COMPANY TEXAS LP (Valero East)	54.41
3	CITGO REFINING & CHEMICALS CO (Citgo East)	46.07
4	VALERO REFINING-TEXAS LP (Valero West)	29.99
5	KOCH PETROLEUM GROUP LP	13.51
6	EQUISTAR CHEMICALS LP	11.65
7	CITGO REFINING & CHEMICALS CO LP (Citgo West)	6.86
8	TICONA POLYMERS INC	4.52
9	ENTERPRISE PRODUCTS OPERATING LP	4.49
10	SHERWIN ALUMINA COMPANY	2.67
11	VALERO LOGISTICS OPERATIONS LP	2.18
12	MAGELLAN TERMINALS HOLDINGS LP	2.10
13	NUSTAR LOGISTICS LP	1.92
14	PLAINS MARKETING LP	1.70
15	CITGO REFINING AND CHEMICALS CO LP	1.20
16	KIRBY INLAND MARINE LP	1.19
17	TRIGEANT LTD.	1.10
18	TEXAS CRUDE ENERGY INC	0.98
19	CORPUS CHRISTI COGENERATION LP	0.79
20	ENTERPRISE HYDROCARBONS LP	0.49
21	CROSSTEX CCNG PROCESSING LTD	0.36
22	CHAPARRAL ENERGY LLC	0.32
23	ABRAXAS PETROLEUM CORP	0.29
24	E.I. DUPONT DE NEMOURS & CO INC.	0.21
25	OCCIDENTAL CHEMICAL CORPORATION	0.13
26	AIR LIQUIDE AMERICA CORP	0.09
27	CORPUS CHRISTI ARMY DEPOT	0.09
28	BARNEY M DAVIS LP	0.07
29	ELEMENTIS CHROMIUM LP	0.06
30	GREGORY POWER PARTNERS LP	0.04
31	NATURAL GAS PIPELINE CO OF AMERICA	0.03
	Total	256.42

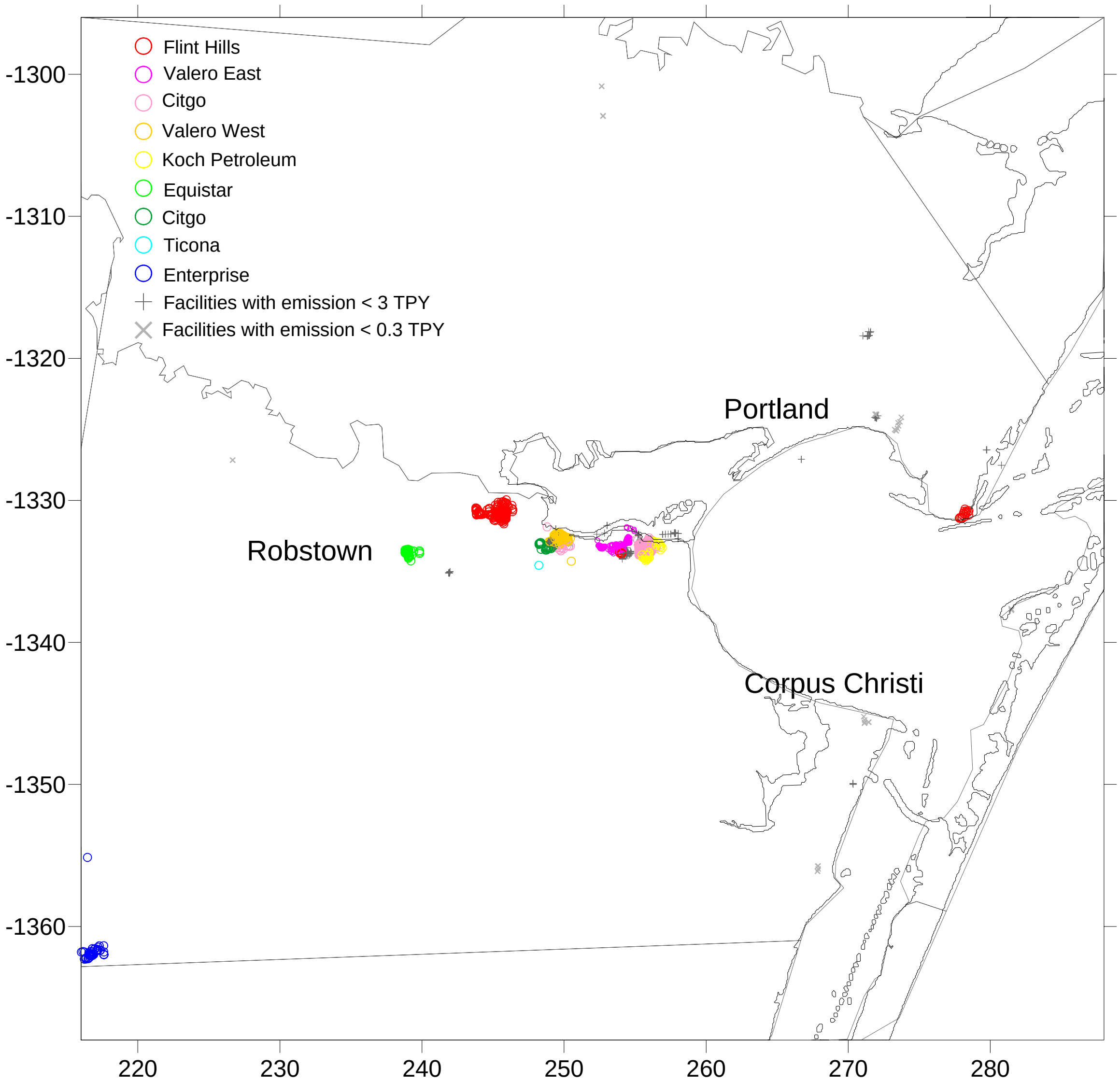


Figure 3-2. Location of benzene emission sources color-coded by facility in the 2005 Photochemical Modeling inventory.

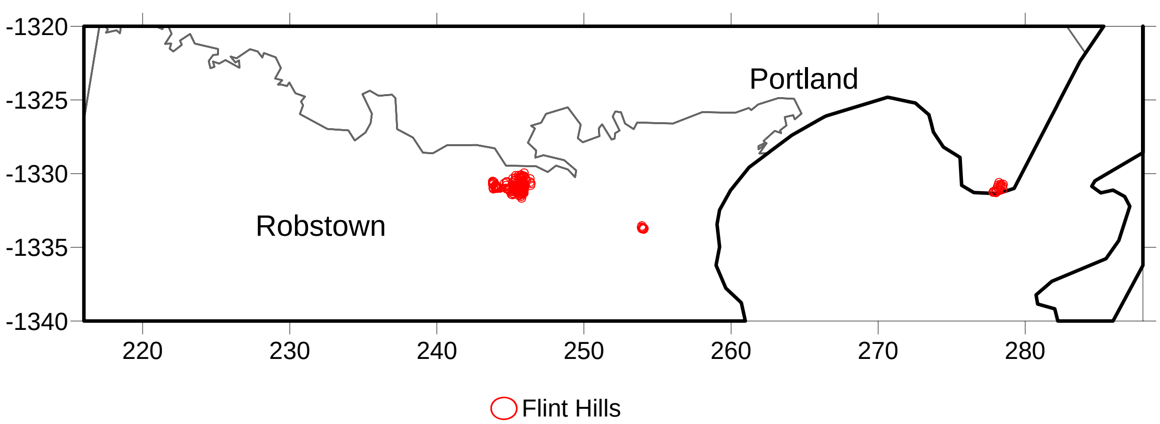


Figure 3-3. Location of Flint Hills emission sources.

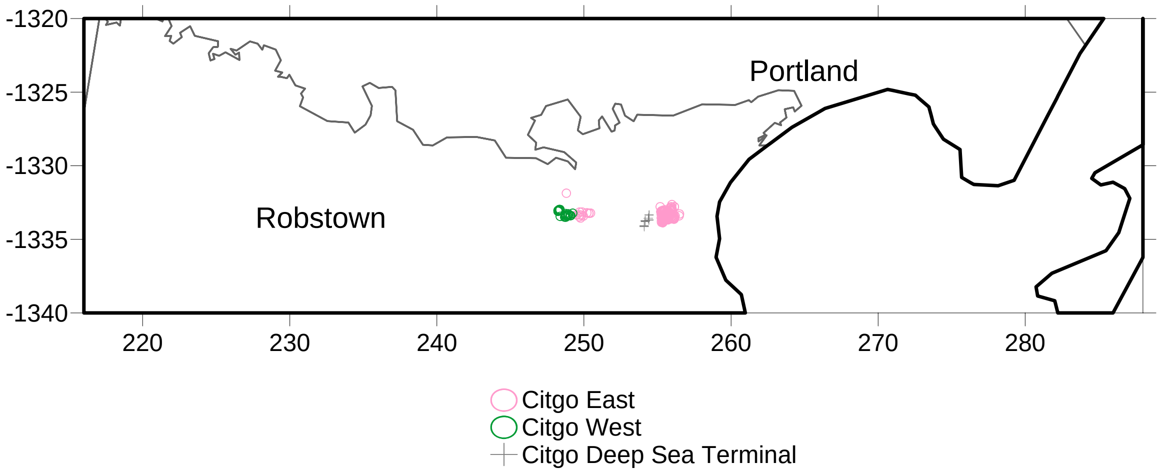


Figure 3-4. Location of Citgo emission sources.

Table 3-5. Revised list of the top emitting benzene facilities near Corpus Christi.

Rank	Facility	Emissions (TPY)
1	Flint Hills West	65.56
2	Valero East	54.41
3	Citgo East	45.37
4	Valero West	29.99
5	Koch Petroleum	13.51
All others		47.57

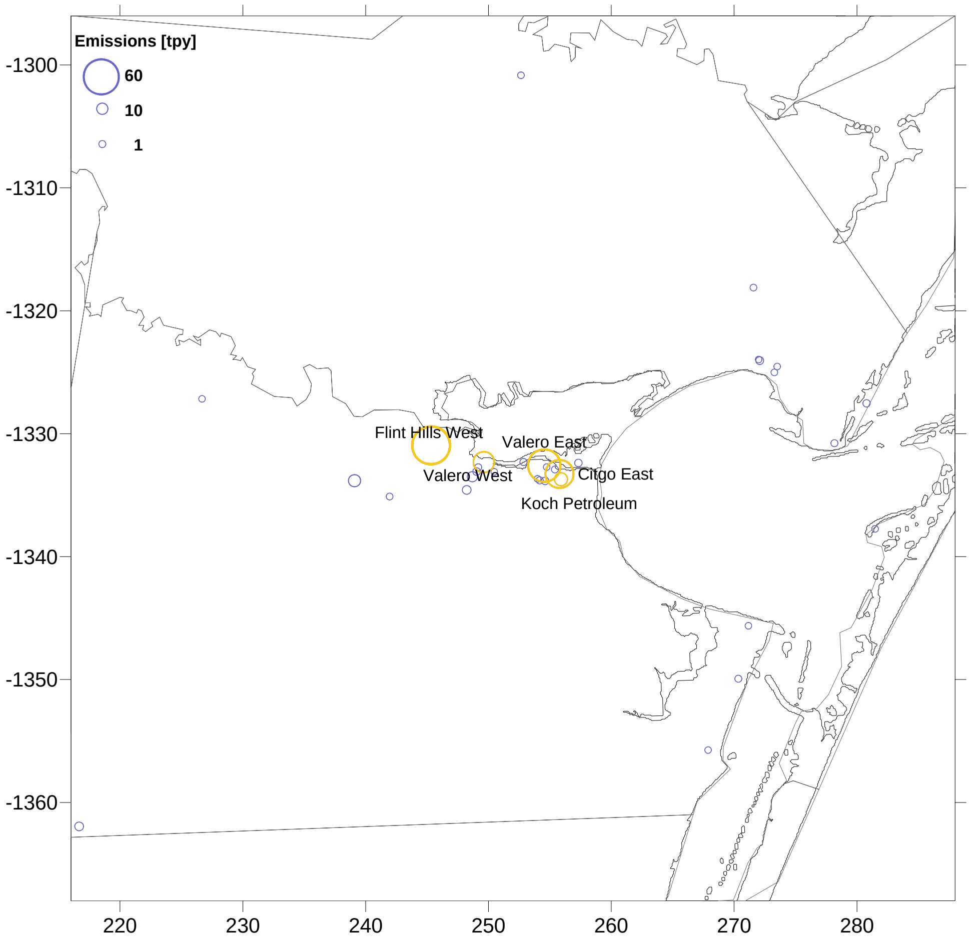


Figure 3-5. Benzene emissions by facility in the 2005 TCEQ Photochemical Modeling database, scaled to the emission rate by facility.

The 2005 TCEQ Photochemical Modeling benzene inventory contained 1014 point sources within the modeling domain – about 400 more than NEI. The additional number of sources increased computational time by 70% (28 min in Run 1a vs. 48 min in Run 2 to simulate October 2 on a linux machine with AMD Athlon XP 3200+ CPU).

The top and bottom of Figure 3-6 show spatial plots of the daily maximum hourly benzene on October 1 and 2, respectively. The left side displays Run 1a, which used the 2002 NEI inventory, and the right side shows Run 2, based on the 2005 TCEQ Photochemical Modeling inventory database. Note that even though the color scale is only set to 4 ppb, local peaks near the sources can go much higher.

The NEI inventory incorrectly placed Flint Hills West near Robstown, resulting in an erroneous plume and gridded domain peak concentrations of 6.6 and 57.7 ppb downwind of Flint Hills West on October 1 and 2, respectively.

The 2005 TCEQ Photochemical Modeling inventory placed Flint Hills West in the correct location with lower emissions (87 tpy in NEI vs. 66 tpd in 2005 TCEQ Photochemical Modeling inventory). The largest gridded benzene concentration was 34.9 ppb on October 1. The high value was attributed to the facility being in the same grid cell as the receptor. If grid cells containing emission sources were excluded, the domain peak would be reduced to 7.5 ppb.

When examining discrete receptors on October 1, the peak concentration was much lower (0.3 ppb) because winds were predominantly from the southeast, placing most discrete receptors upwind of the major facilities, as can be seen in Figure 3-7. On October 2, the highest gridded and discrete concentrations of benzene were 9.9 ppb (7.5 ppb when excluding cells with facilities) and 1.2 ppb, respectively.

Since the 2005 TCEQ Photochemical Modeling inventory located the largest facility – Flint Hills West – in the proper location, all runs that follow will use benzene emissions from it.

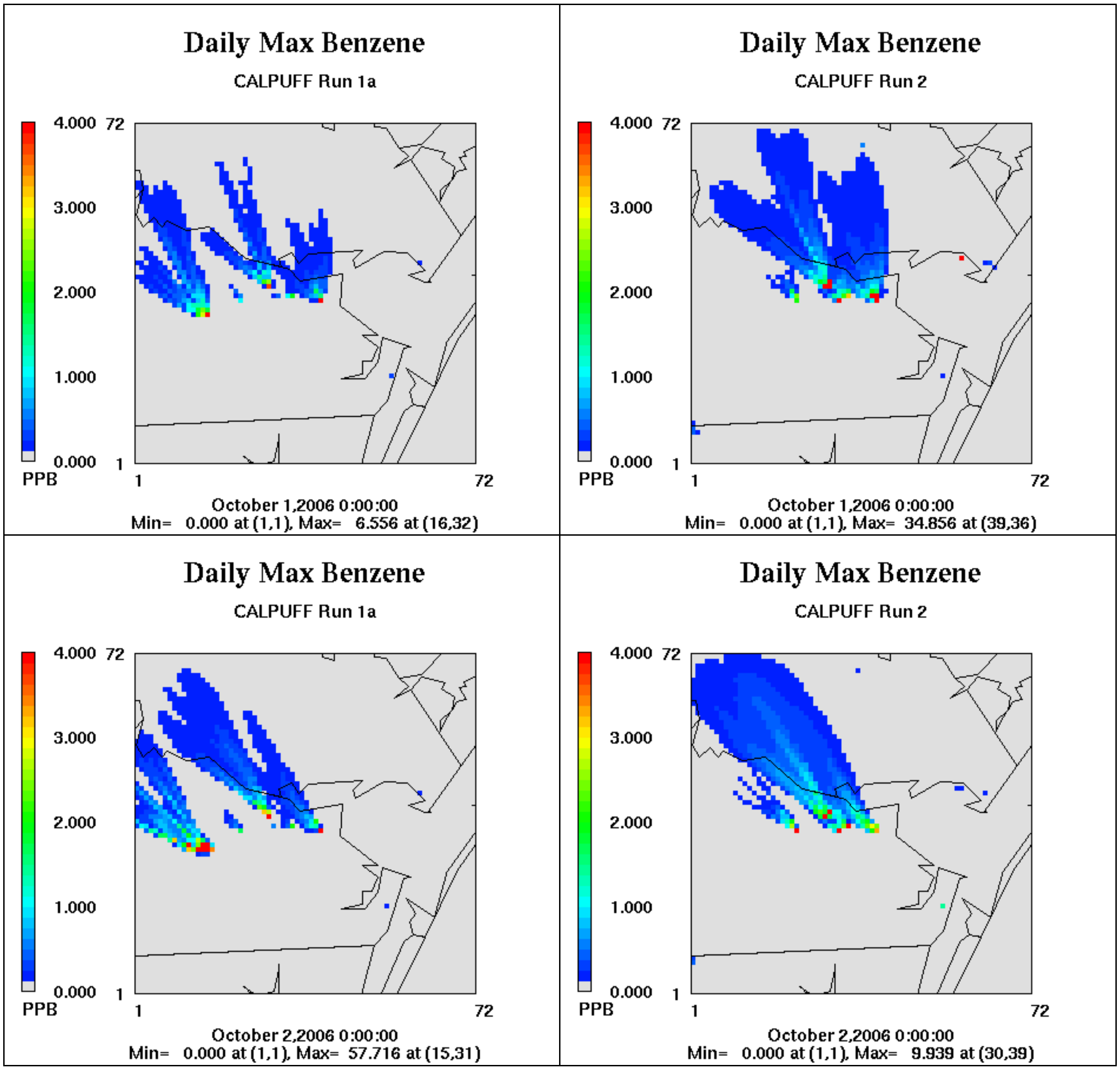


Figure 3-6. Spatial plots of the daily maximum hourly benzene concentrations on October 1 (top) and October 2 (bottom) using NEI emissions (left) and emissions from the 2005 TCEQ Photochemical Modeling inventory (right).

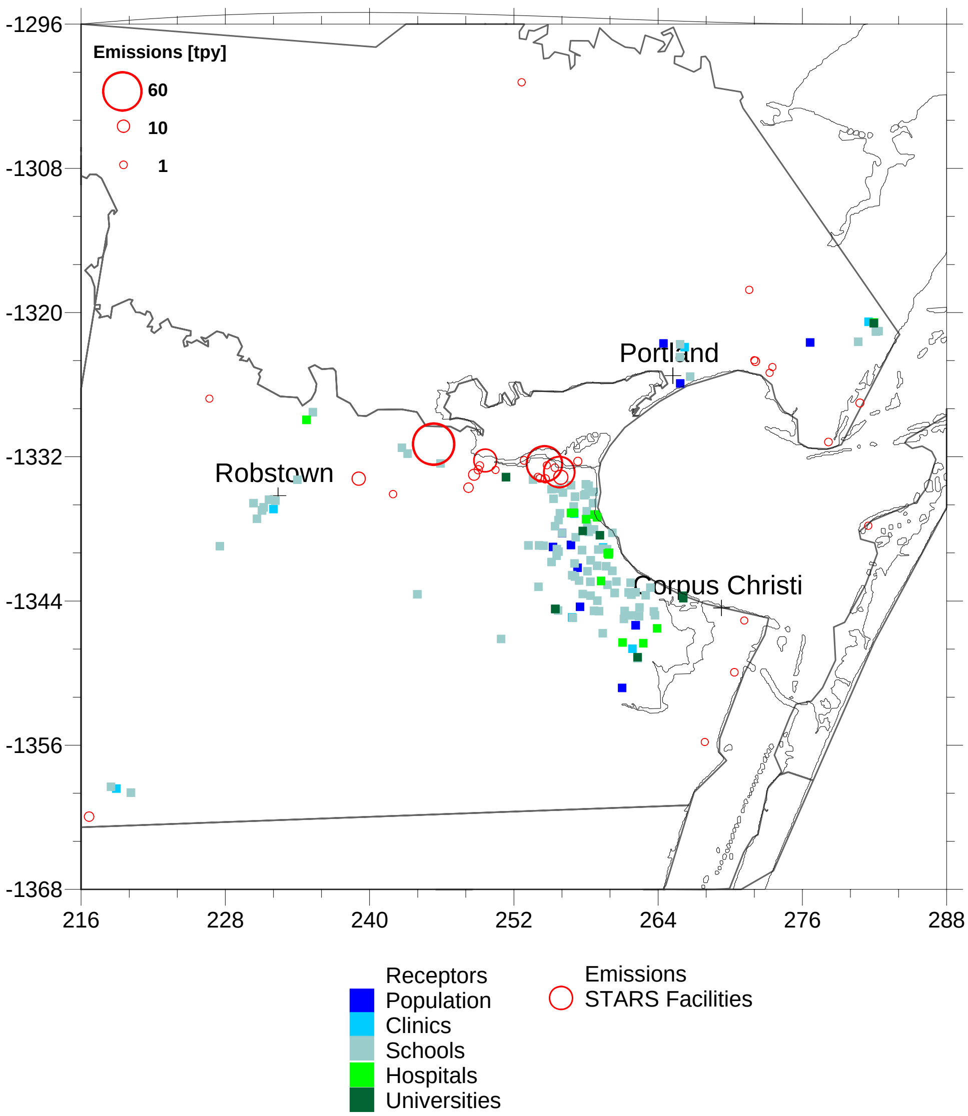


Figure 3-7. Location of discrete receptors and emission facilities in the 2005 TCEQ Photochemical Modeling inventory.

Sensitivity to slugs

Slugs can be thought of as a continuous release of puffs to resemble an elongated puff. They are recommended for near field modeling. Since many schools are located very close to the large emission sources, the use of slugs needs to be examined. Run 3 was configured exactly like Run 2, but with the slug option (MSLUG) turned on.

Effects of slugs can be seen more easily when viewing an individual hour. Snapshots of the benzene concentration at 3AM on October 2 are displayed in Figure 3-8. This hour contained the highest benzene concentration in Run 2 and largest change in benzene when using slugs. The left and middle compare benzene concentrations without and with the use of slugs, respectively. The right side shows their differences.

Without slugs, the peak benzene concentration at 3AM was 9.9 ppb over the Flint Hills West facility (grid cell (30, 39)). With slugs, benzene was reduced 1.4 ppb to 8.5 ppb – the largest reduction of any hour in the domain, while benzene increased 2.1 ppb in an adjacent diagonal cell that did not contain any emission sources. The largest differences when incorporating slugs occurred late night and early morning close to the emission sources; differences decreased rapidly downwind.

Among the discrete receptors, the highest hourly concentration (1.25 ppb) in Run 2 was located at a school near Flint Hills West with coordinates (245.9, -1332.6). Slugs increased the peak concentration among discrete receptors by 0.06 ppb, located in the same receptor.

The full potential of slugs could not be determined from the October 1 and 2 analysis because most of the nearby receptors were upwind of the facilities. The use of slugs required four times more computational time. Run 2 took 48 minutes to simulate October 2; Run 3 required 194 minutes.

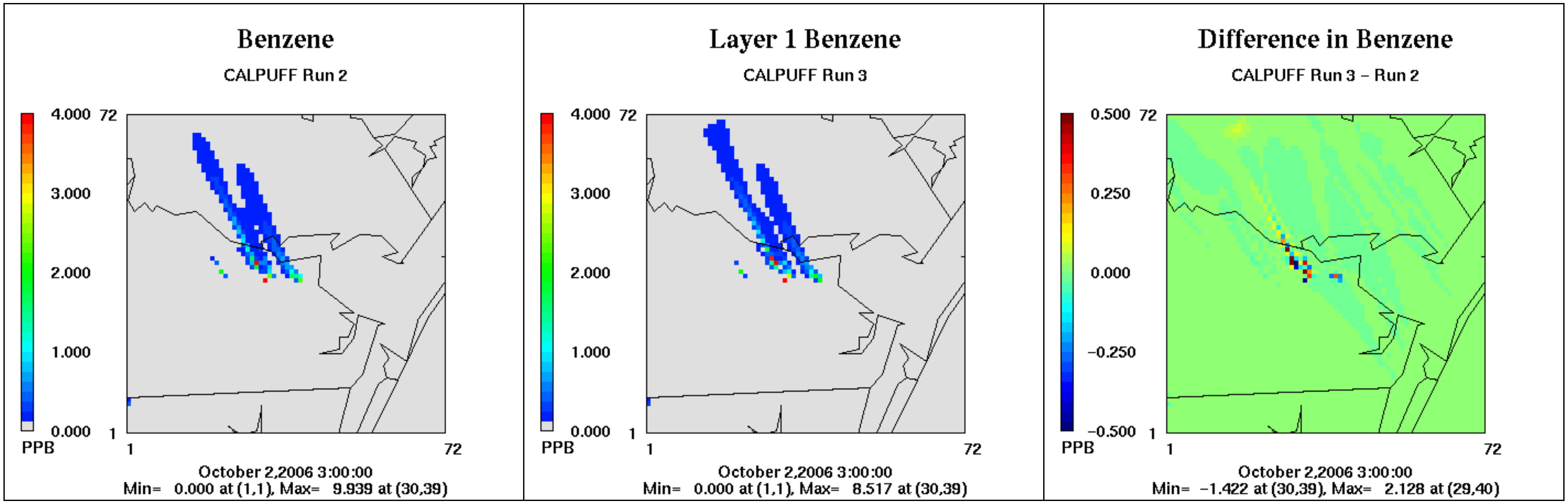


Figure 3-8. A comparison of benzene concentrations without slugs (Run 2) and with slugs (Run 3).

Micrometeorological variables to compute dispersion coefficients

In Run 2, the dispersion coefficients (σ_y and σ_z) were computed from empirical formulas based on the Pasquill-Gifford stability class and downwind distance. Run 4 examined the impacts to benzene when using micrometeorological variables to compute these dispersion coefficients. The micrometeorological variables, such as friction velocity, convective velocity scale, and Monin Obukhov length, were derived from meteorological observations and surface characteristics from CALMET.

The top of Figure 3-9 compares benzene concentrations at 3AM on October 2 between Run 2 and Run 4; the bottom compares the daily maximum concentrations. The micrometeorological variables appeared to generate larger spread parameters near Flint Hills West, resulting in lower peaks near the source and higher concentrations further downwind. At grid cell (30,39), the domain peak of 9.9 ppb in Run 2 dropped 7.5 ppb at 3AM, and almost 7 ppb during the domain maximum. The same grid cell also showed the greatest reduction (1.4 ppb reduction) when using slugs in Run 3.

Benzene concentrations were higher near Valero East and downwind. The domain peak shifted to Valero East as the new method of computing dispersion coefficients increased benzene over 4 ppb to 6.7 ppb in grid cell (38, 36), which was in between but not directly over the Valero East facility.

At the discrete receptors, the largest concentration was 1.18 ppb near Flint Hills West in Run 2. In Run 4, the micrometeorological variables reduced the peak concentration to 0.54 ppb at a receptor further downwind of Flint Hills West since concentrations very close to the facility were greatly reduced.

The use of micrometeorological variables to compute the dispersion coefficients reduced computational time by 30% (Run 4 required 32 minutes compared to 48 minutes for Run 2).

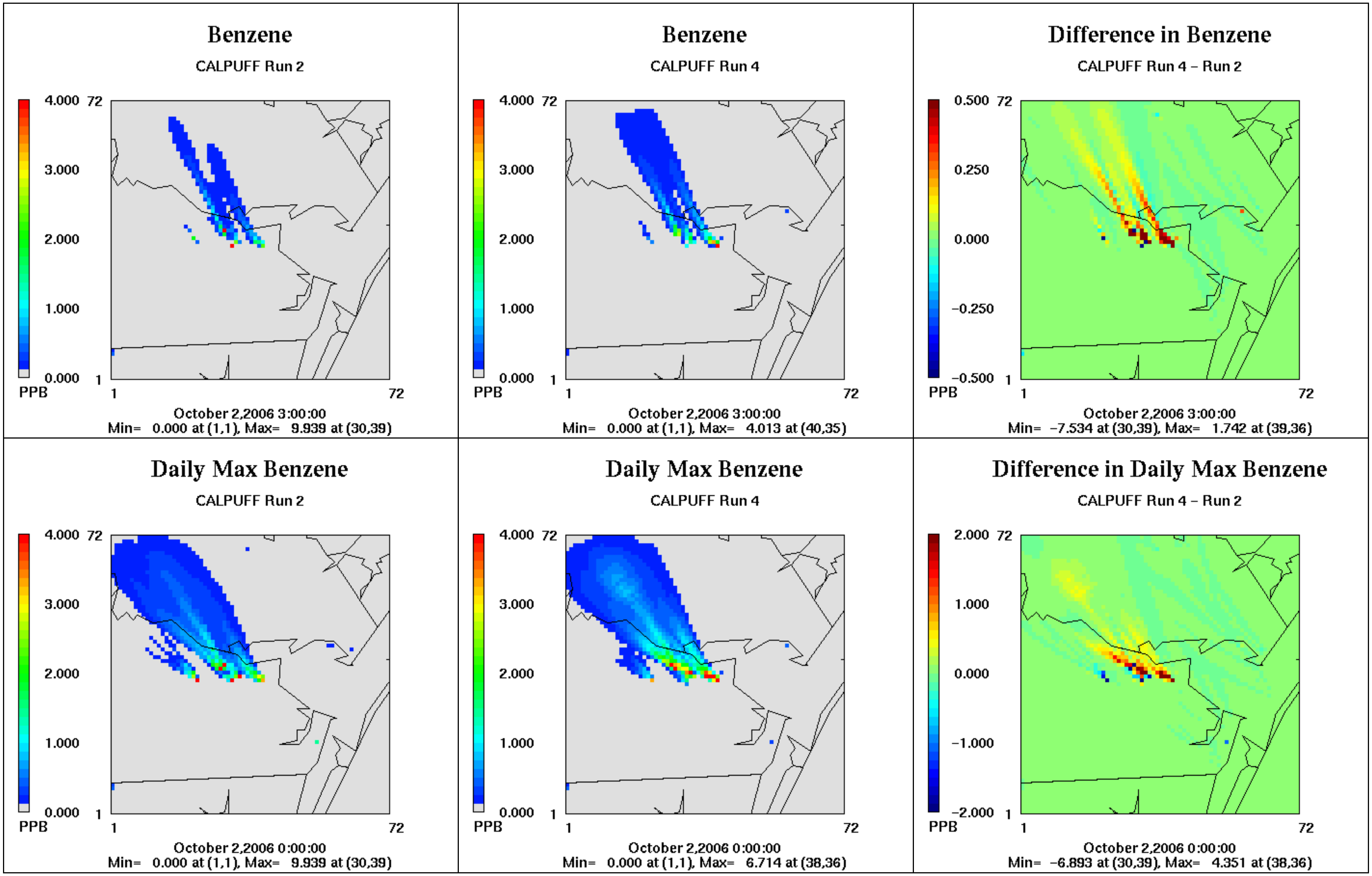


Figure 3-9. Sensitivity to micrometeorological variables to compute dispersion coefficients at 3AM (top) and daily maximum (bottom)

Sensitivity to puff splitting

Puff splitting is useful when there is a lot of wind shear, allowing puffs to separate into different directions, but could be more time consuming as CALPUFF has to keep track of more puffs. Run 5 was configured with the puff splitting flag, MSPLIT, activated.

Compared to Run 2, puff splitting had no impact on benzene concentrations nor to the computational time on October 2. Figure 3-10 shows the difference in gridded benzene concentrations at 3AM on October 2. Differences in all grid cells and hours were on the order of 1.E-5 ppb. The domain peak was unchanged at 9.9 ppb, or 7.5 ppb when excluding grid cells with point sources. The highest benzene concentration at a discrete receptor was 1.2 ppb at a school near Flint Hills West.

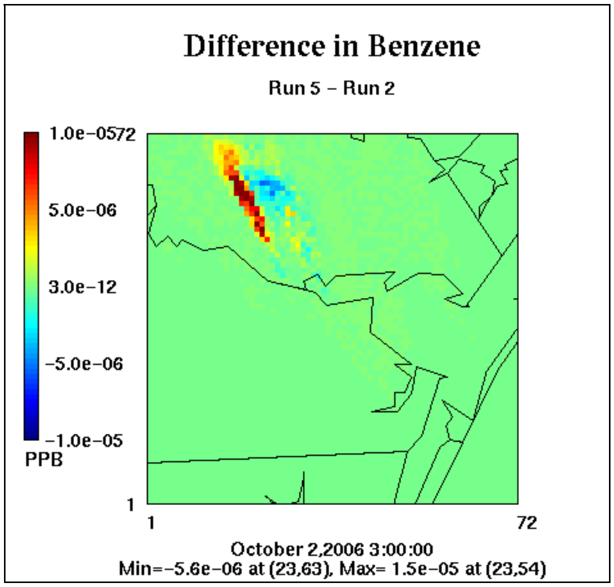
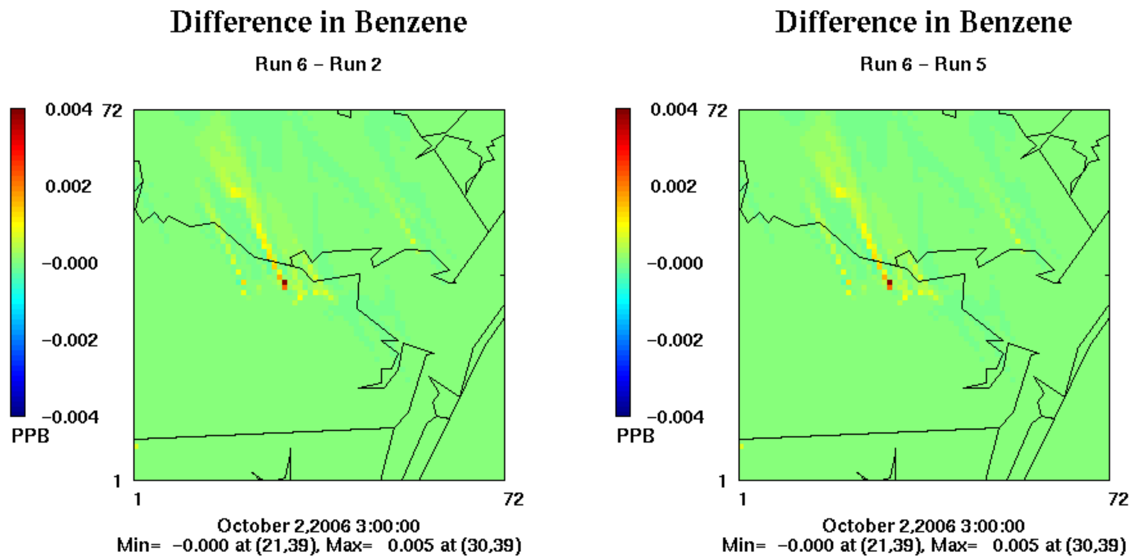


Figure 3-10. Benzene sensitivity to puff splitting.

Sensitivity to vertical wind shear above stacks

A sensitivity test examined the effects of wind shear above stack tops when coupled with puff splitting. These two features were added to Run 2 in the Run 6 configuration.

Run 6 was compared to both Run 2 to evaluate the effects of puff splitting with vertical wind shear, and to Run 5 to examine the impacts of vertical wind shear above the stacks only, as shown on the left and right sides of Figure 3-11. The vertical wind shear above stack tops produced minor differences on the order of 1E-3 ppb, including a 0.005 ppb increase at the domain peak. The results were the same whether puff splitting was included or not, since puff splitting created differences on the order of 1E-5 ppb.



Impacts from puff splitting + vertical wind shear

Impacts from vertical wind shear above stacks only

Figure 3-11. Impacts to benzene when allowing vertical wind shear above the stack tops.

Sensitivity to surface roughness

CALPUFF Run 7 incorporated surface roughness into the Pasquill-Gifford dispersion coefficients. Figure 3-12 compares the 3AM and daily maximum benzene between Run 2 and Run 7. When compared to Run 2, the daily maximum domain peak over Flint Hills West dropped from 9.9 to 6.3 ppb. When grid cells containing emission sources were removed, the domain peak was only 3.6 ppb – the lowest peak among all runs evaluated.

The largest reduction to the daily maximum was located one diagonal grid cell away from Flint Hills West, where benzene was reduced 4.4 ppb; the largest increase (+2.8 ppb) was found over Valero East. A similar pattern was found in Run 4, when micrometeorological variables were used to compute the dispersion parameters. The surface roughness tended to show mostly benzene reductions downwind of the facilities, whereas micrometeorological variables often led to more benzene downwind.

Among the discrete receptors, the school near Flint Hills West had the highest benzene concentration in both Run 2 and Run 7. Run 2 was 1.18 ppb; The addition of surface roughness in Run 7 reduced the peak concentration by 0.44 ppb to 0.74 ppb.

The addition of the surface roughness to the dispersion coefficient calculations added 20% more computational time, increasing from 48 minutes in Run 2 to 59 minutes in Run 7.

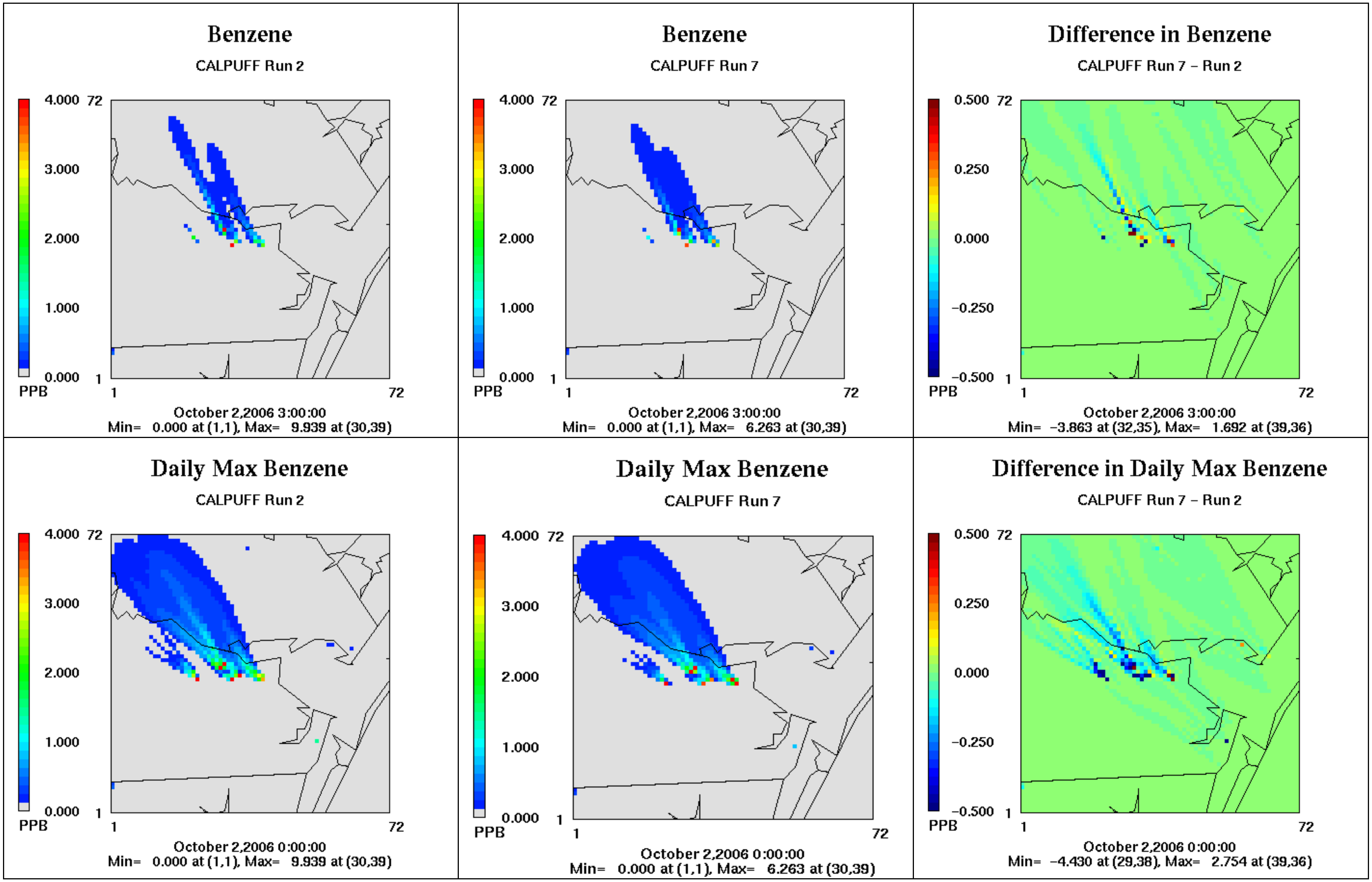


Figure 3-12. Spatial plots of the 3AM (top) and daily maximum (bottom) benzene with (Run 7) and without (Run 2) surface roughness effects.

Choosing the most favorable CALPUFF configuration

Table 3-5 summarizes the CALPUFF sensitivities performed in this study, listing the largest benzene concentration from gridded receptors in cells with and without emission sources, and from discrete receptors. The time needed to simulate CALPUFF on October 2 on an AMD Athlon XP 3200+ machine in Linux is also shown in the rightmost column.

Flint Hills West was the biggest emitter of benzene in both the NEI and 2005 TCEQ Photochemical Modeling inventories. NEI placed Flint Hills West too far to the west, creating a domain peak of 58 ppb immediately downwind of the erroneous location. The 2005 TCEQ Photochemical Modeling EI correctly placed Flint Hills West closer to the Port of Corpus Christi, and was the inventory selected for the episodic model run.

Run 2 was configured with emissions from the 2005 TCEQ Photochemical Modeling inventory and CALMET Run 13 meteorology. All subsequent runs were compared to Run 2.

The two runs that adjusted the dispersion coefficients – Run 4, which used micrometeorological variables, and Run 7, which accounted for surface roughness in the dispersion coefficients – made the largest impacts to benzene. Both runs reduced the domain peak in grid cell (30,39) in Run 2 (9.9 ppb) over Flint Hills West by several ppb. Both runs increased benzene concentrations 1.7 ppb over grid cell (39,36), which was near the Valero East facility – the second largest source of benzene.

Figure 3-13 compares the differences in daily maximum benzene in Run 4 and Run 7 when compared to Run 2. Benzene was generally higher downwind of the major emission sources when using micrometeorological variables to compute the dispersion coefficients, but lower when factoring in surface roughness.

Since benzene observations were not available to determine which method for computing dispersion coefficients yielded the best model performance, the method chosen was based on scientific soundness. Theoretically, if the meteorological data is good, the use of meteorological variables to compute the dispersion coefficients should yield more realistic results than those based on empirical formulas and constants extracted from defined classes. Considering that there were eight surface stations near the Port of Corpus Christi, the use of micrometeorological variables was selected as the method to compute dispersion parameters in the final CALPUFF configuration.

The use of slugs in Run 3 did not alter benzene concentrations as much as the changes to the dispersion coefficients had. For example, the largest reduction (-1.4 ppb) at 3AM took place in the same grid cell as the peak reductions in Run 4 and Run 7 – cell (30,39) over Flint Hills West, where benzene was reduced 7.5 and 3.7 ppb, respectively. Slugs also increased benzene in grid cell (39, 36) near Valero East by 0.3 ppb; Run 4 and Run 7 increased the benzene by 1.7 ppb.

The influence of slugs did not seem as widespread as the micrometeorological variables, as can be seen in the difference plots in Figure 3-13. Considering that the impacts from slugs were smaller in magnitude and areal extent compared to the micrometeorological variables, and that slugs required 4 times more computational time, slugs were not used in the final set of runs.

Vertical wind shear altered benzene concentrations by a few thousandths of a ppb while puff splitting impacts were even smaller. Neither option was used in the final runs.

The most favorable CALPUFF configuration evaluated was Run 4, which consisted of micrometeorological variables to compute the spread parameters and the 2005 TCEQ Photochemical Modeling EI.

Table 3-5. Summary of CALPUFF peak benzene concentrations from sensitivity runs on October 2, 2006 at gridded and discrete receptors.

Run	Emissions	CALMET Run	Sensitivity	Highest Benzene (from all grid cells) [ppb]	Highest Benzene (from grid cells containing no facilities) [ppb]	Highest Benzene (from discrete receptors) [ppb]	Time to simulate Oct 2. (min)
Run 1	NEI 2002	Run 1 (10 vertical layers)		n/a	n/a	38.430	2
Run 1a	NEI 2002	Run 13	14 vertical layers	57.716	57.716	38.748	28
Run 2	2005 TCEQ Photochemical Modeling EI	Run 13	2005 TCEQ Photochemical Modeling inventory emissions	9.939	7.506	1.184	48
Run 3	2005 TCEQ Photochemical Modeling EI	Run 13	Run 2 with slugs	8.639	6.730	1.246	194
Run 4	2005 TCEQ Photochemical Modeling EI	Run 13	Run 2 using micrometeorological variables to compute spread parameters	6.714	6.714	0.535	32
Run 5	2005 TCEQ Photochemical Modeling EI	Run 13	Run 2 with puff splitting	9.939	7.506	1.184	48
Run 6	2005 TCEQ Photochemical Modeling EI	Run 13	Run 2 with puff splitting and vertical wind shear above stacks	9.944	7.507	1.184	48
Run 7	2005 TCEQ Photochemical Modeling EI	Run 13	Run 2 with surface roughness effects	6.263	3.644	0.740	59

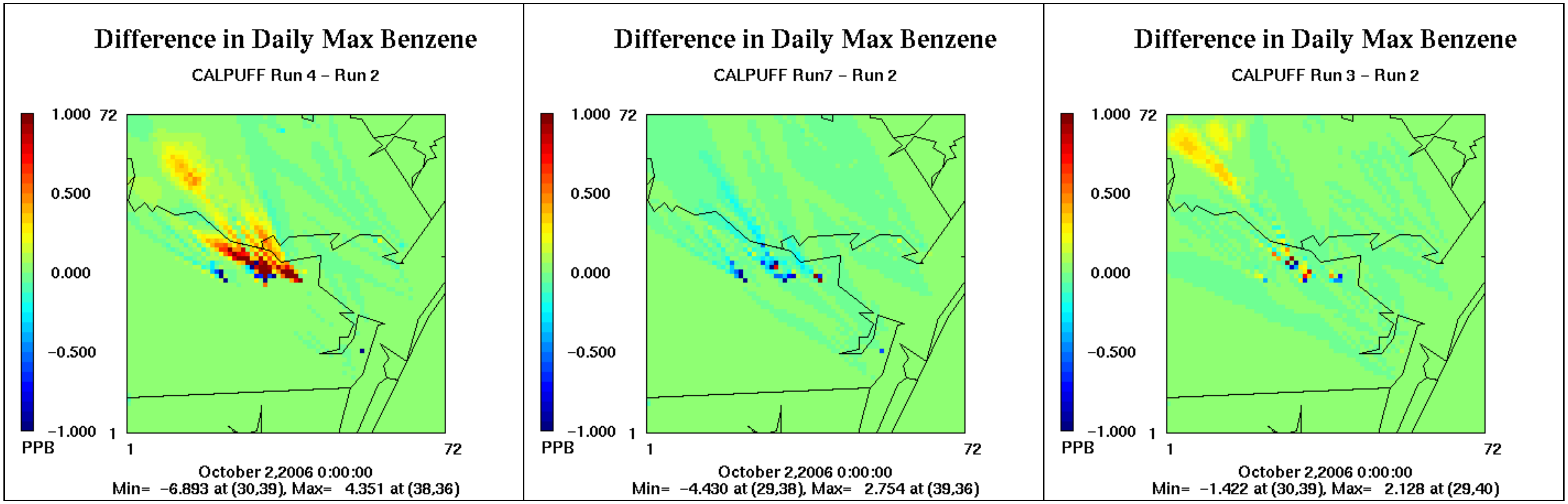


Figure 3-13. Impacts to the daily maximum benzene when using micrometeorological variables to compute the dispersion coefficients (left), when applying roughness to the dispersion coefficients (middle), and when using slugs (right).

Sensitivity to meteorology

The final sensitivity test examined how sensitive CALPUFF responded to different meteorology. Since CALPUFF Run 4, which used meteorology from CALMET Run 13, was believed to have the most favorable setup, a sensitivity test was performed using CALMET Run 12 as the meteorological inputs. CALMET Run 12 contains all the options in CALMET Run 13 plus the O'Brien vertical velocity adjustment, which made noticeable changes to the wind field.

Figure 3-14 compares the daily maximum benzene concentration between Run 4 and Run 8; the bottom shows the difference between the two runs. CALPUFF definitely responded to the different meteorology. Concentrations near Valero East and Citgo East were lower in Run 8 than in Run 4 because the O'Brien scheme produced faster wind speeds near the Port on October 2, just like on October 1. The faster southeasterlies spread benzene further downwind and further west, as can be seen in the difference plot.

The largest concentration from all grid cells on October 2 was 6.7 ppb in Run 4 and 6.6 ppb in Run 8. The peak value was similar, but the location differed. When grid cells containing emission sources were removed, the peaks from the two runs were in the same location (LCP coordinates (253.5, -1332.5)); Run 8 was a few tenths lower than in Run 4.

The highest benzene at discrete receptors from both runs was located downwind of Flint Hills West. Run 8's peak was closer to Flint Hills West, and consequently, higher in concentration than in Run 4.

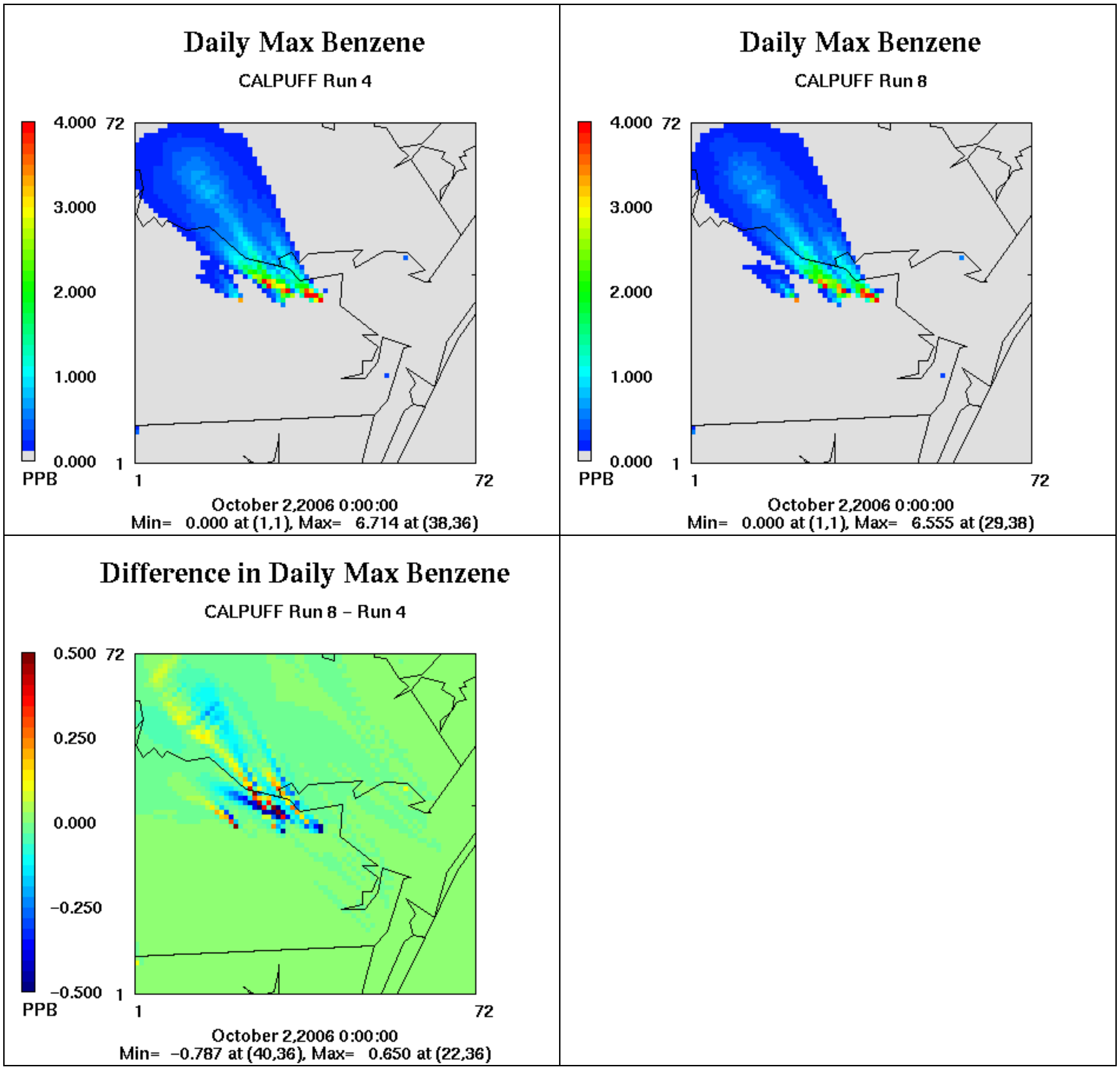


Figure 3-14. Comparison of the daily maximum benzene when using meteorology adjusted with the O'Brien scheme (Run 8) and without the adjustment (Run 4).

3.3. FULL-EPISODE CALPUFF RUN

The CALPUFF Run 4 configuration was considered the most realistic setup. This configuration consisted of CALMET Run 13, which used high-resolution coastline data, kinematic effects of terrain, and additional smoothing in layers aloft, and CALPUFF Run 4 inputs, which consisted of benzene emissions from the 2005 TCEQ Photochemical Modeling inventory, micrometeorological variables to compute the dispersion coefficients, and both gridded and discrete receptors. CALPUFF was run for the entire October 1 to November 30, 2006 episode.

Figure 3-14 shows a spatial plot of the episode maximum benzene concentration. The small blue X's represent the locations of the 141 discrete receptors and the black dots represent each facility. The highest hourly benzene concentration was located directly over the Flint Hills West facility at 53.2 ppb on November 17. A second gridded peak was located over Valero East at

47.4 ppb. When grid cells containing emission sources were excluded, the domain and episode peak concentration was 29.0 ppb at LCP location (256.5, -1334.5) on October 17, which was close to a number of facilities including Valero East and Citgo East. The highest 1-hour benzene concentration at a discrete receptor was 34.2 ppb at a school with LCP coordinates (253.6, -1333.9) at midnight on October 22.

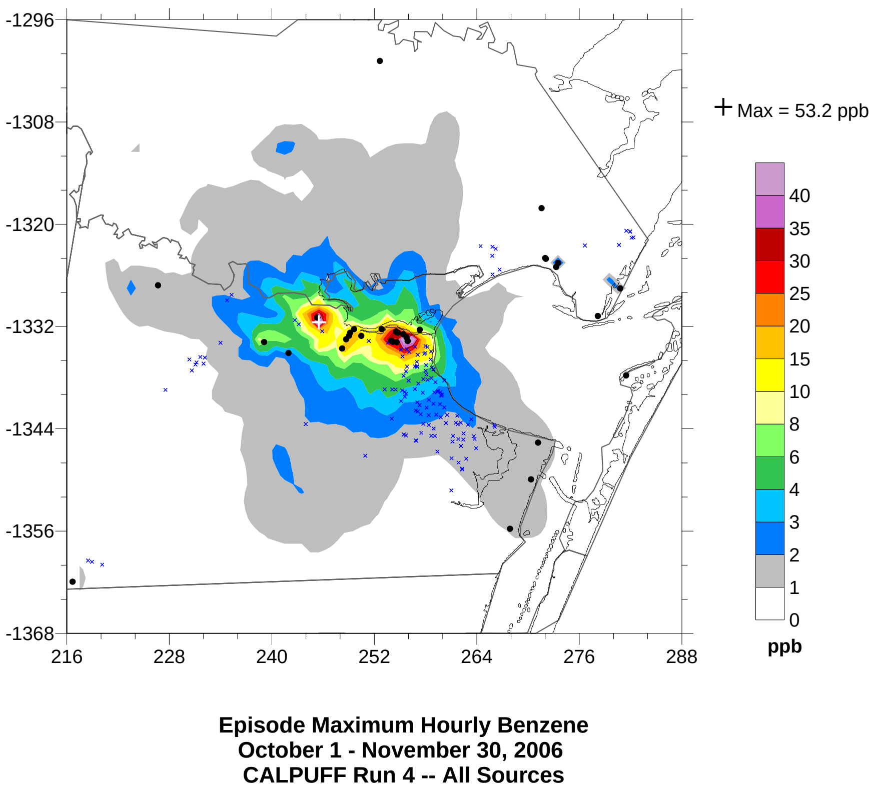


Figure 3-14. Episode maximum benzene from all sources in CALPUFF Run 4.

3.4. SOURCE APPORTIONMENT

The CALPUFF Run 4 configuration was applied to five more runs for the full two-month episode. These runs isolated the emissions from each of the five largest facilities – Flint Hills West, Citgo East, Valero East and West, and Koch Petroleum – to examine each facility's impact.

Contour plots of the highest 1-hour benzene contribution in the 2-month episode from each of the five facilities are displayed in Figure 3-15. Locations of the discrete receptors and facilities are also shown.

A list of the highest contributions from each facility to any grid cell in the domain and to any grid cell that was outside the facility can be found in Table 3-6. The highest benzene contribution to a discrete receptor is listed in Table 3-7. Episode peaks at all gridded and discrete receptors always occurred late night or in the early morning. The highest contribution to a gridded receptor was directly over the facility in all five cases.

Flint Hills West emitted the most benzene and was responsible for almost all of the benzene at the all-source peak of 53.2 ppb. Excluding cells that were inside the Flint Hills West facility, the highest concentration among gridded receptors was 21.0 ppb. Flint Hills West was relatively distant from most of the discrete receptors, but one of the receptors adjacent to the facility did receive 19.1 ppb benzene on November 18.

Citgo East contributed the most benzene (23 ppb) to a gridded receptor not directly over the facility. Since Citgo East was somewhat close to the main residential area of Corpus Christi, its influence was felt by more receptors than Flint Hills West, especially when the winds were northerly. The largest contribution to a discrete receptor (19.0 ppb) from Citgo East was almost the same as from Flint Hills West (19.1 ppb), despite emitting 30 % less benzene.

Valero East contributed more to a discrete receptor than any other facility. Its contribution of 27.7 ppb at midnight on October 22 to a school with LCP coordinates (253.6, -1333.9) was located at the same receptor and time as the episode peak from all sources combined (34.2 ppb), accounting for 80 % of the total.

Valero West's largest contribution to any discrete receptor of 6.0 ppb was lower than Valero East or Citgo East due to the facility's smaller emission rate and distance further to the west from the majority of the discrete receptors.

Koch Petroleum emitted the least of the five facilities, but had higher contributions to the discrete receptors than Valero West due to its short distance to discrete receptors located to the south. The highest contribution was 9.5 ppb on November 6.

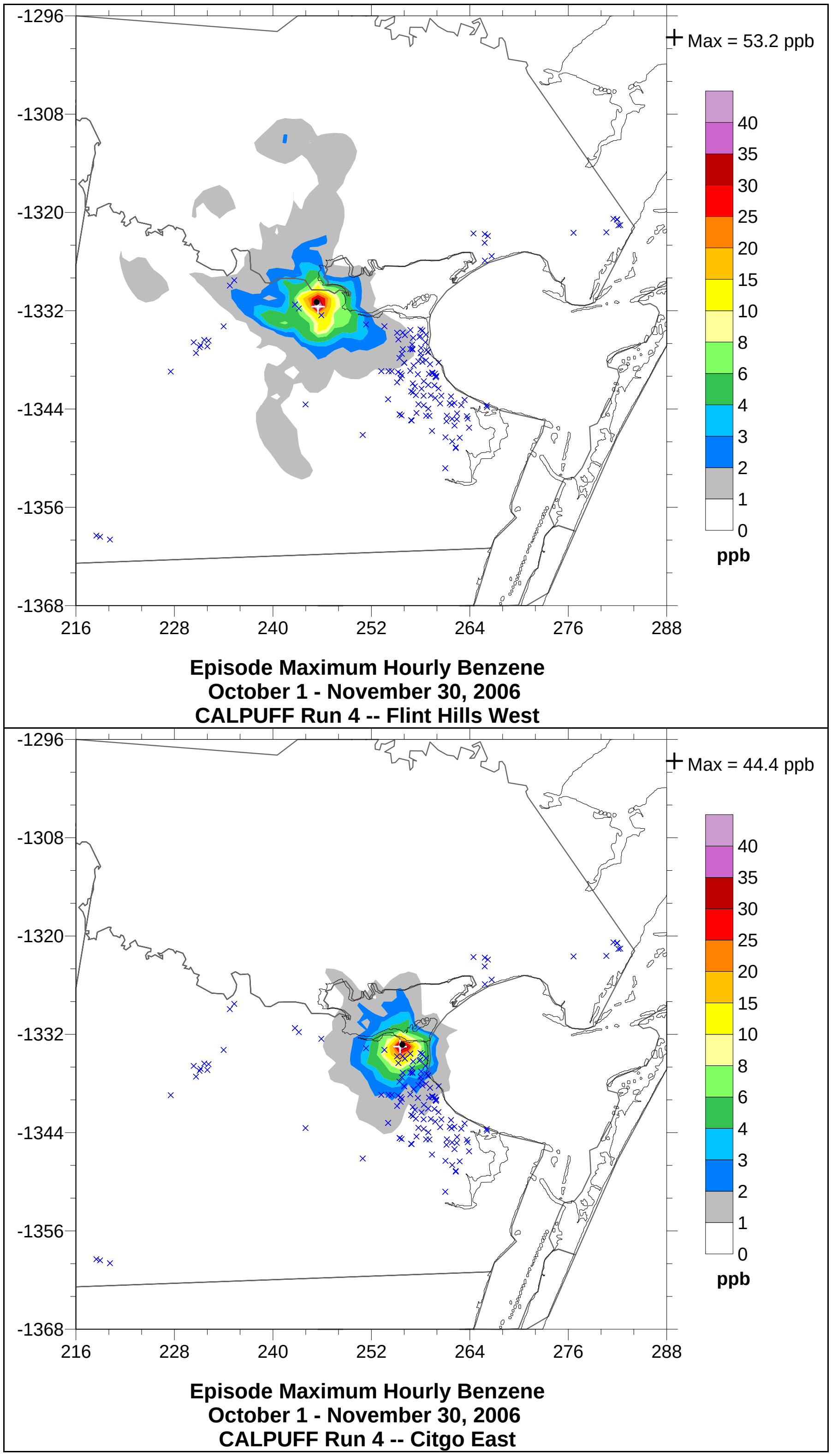


Figure 3-15. Contour maps of the episode maximum 1-hour benzene concentrations from each of the five largest contributors.

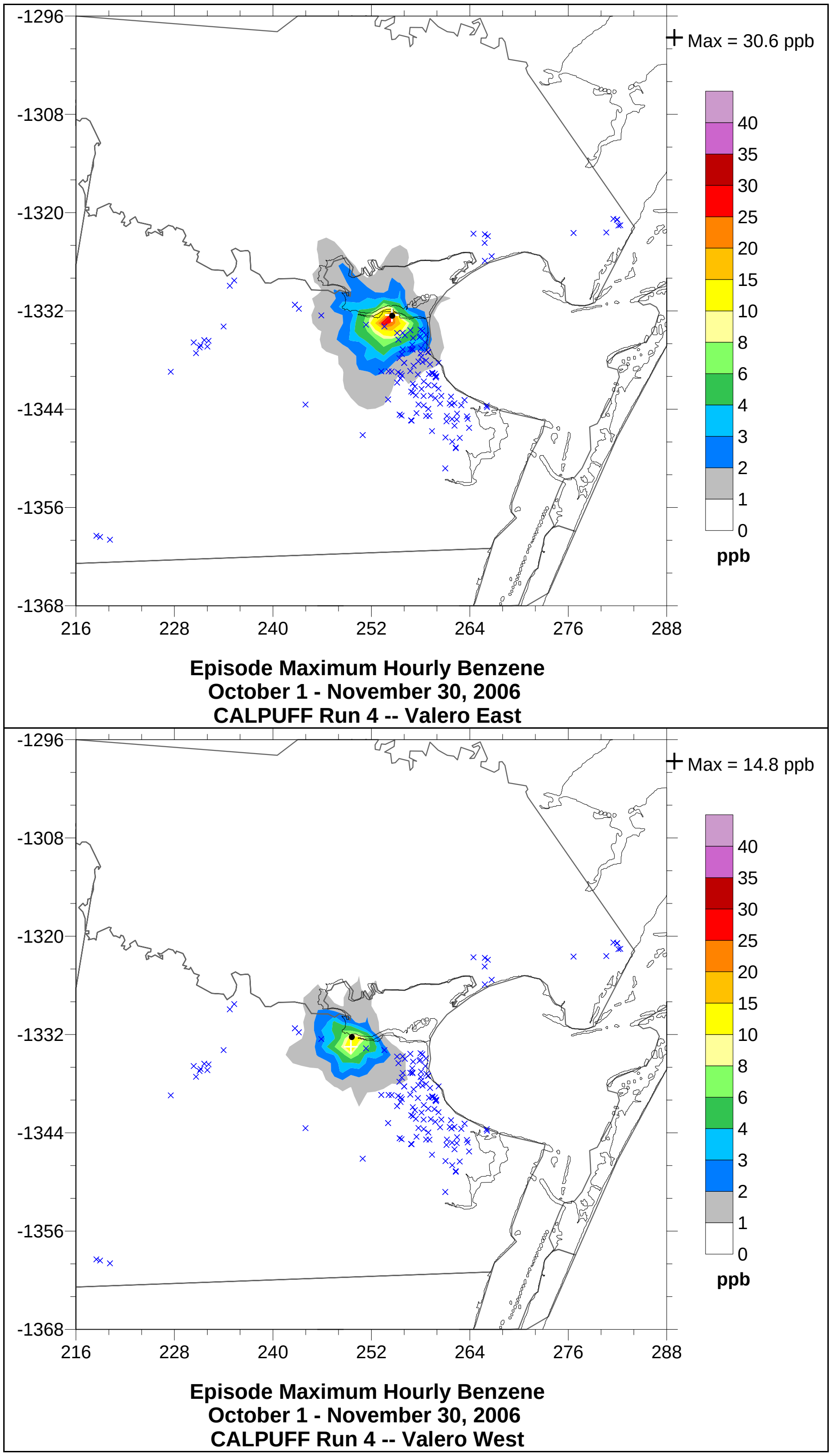


Figure 3-15. (Continued) Contour maps of the episode maximum 1-hour benzene concentrations from each of the five largest contributors.

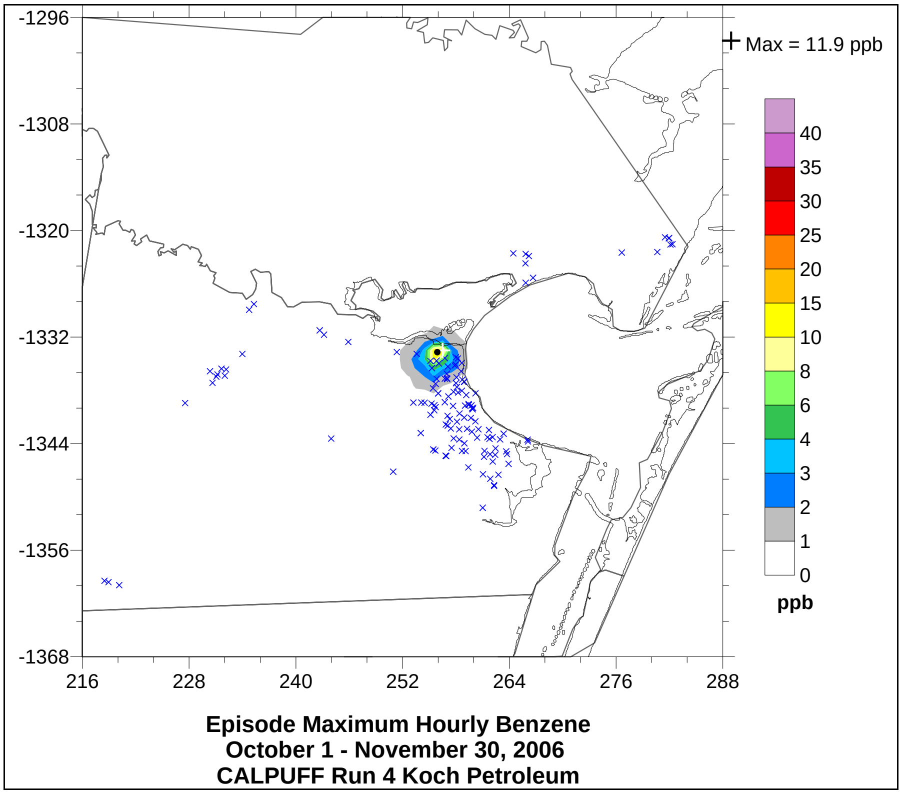


Figure 3-15. (continued) Contour maps of the episode maximum 1-hour benzene concentrations from each of the five largest contributors.

Table 3-6. Largest benzene contribution from each facility at gridded receptors.

Facility	Peak Benzene (all grid cells)	Location	Date	Peak Benzene (gridded cells excluding emission sources	Location	Date
All	53.24	(245.5, -1331.5)	Nov 17, 7am	28.96	(256.5,-1334.5)	Oct 17, 5am
Flint Hills West	53.17	(245.5, -1331.5)	Nov 17, 7am	20.99	(246.5, -1331.5)	Oct 16, 10pm
Citgo East	44.40	(255.5, -1333.5)	Nov 17, 7am	22.99	(255.5, -1334.5)	Nov 6, 11pm
Valero East	30.59	(254.5, -1332.5)	Nov 6, 10pm	15.74	(255.5, -1333.5)	Oct 7, 3am
Valero West	14.80	(249.5, -1333.5)	Oct 16, 10pm	8.51	(248.5, -1333.5)	Oct 5, 1am
Koch Petroleum	11.87	(256.5, -1333.5)	Oct 7, 2am	6.60	(256.5, -1334.5)	Oct17, 5am

Table 3-7. Largest benzene contribution from each facility to discrete receptors.

Facility	Peak Benzene (discrete receptors)	Location	Date
All	34.20	(253.6, -1333.9)	Oct 22, 12am
Flint Hills West	19.10	(245.9, -1332.6)	Nov 18, 7am
Citgo East	18.98	(255.1, -1334.7)	Nov 17, 7am
Valero East	27.67	(253.6, -1333.9)	Oct 22, 12am
Valero West	6.01	(251.3, -1333.7)	Oct 6, 12am
Koch Petroleum	9.50	(255.8, -1334.7)	Nov 6, 11pm

3.5 SUMMARY

A comparison of CALPUFF sensitivities to several important options in the model was evaluated on October 2, 2006 – the second date in the episode. Two benzene emission inventories were examined – the 2002 NEI and 2005 TCEQ Photochemical Modeling EI. The 2005 TCEQ Photochemical Modeling EI contained 50 % more benzene emissions than NEI; the 2005 TCEQ Photochemical Modeling EI also correctly located the largest contributor of benzene – Flint Hills West – whereas NEI positioned it too far to the west. Therefore, all comparisons were based on the 2005 TCEQ Photochemical Modeling EI.

CALPUFF was run with gridded receptors in 1 km resolution and discrete receptors representing populated areas in addition to schools and hospitals. The gridded receptors were most sensitive to options that computed the dispersion coefficients differently. In the initial run, CALPUFF used empirical formulas based on the Pasquill Gifford stability classes and downwind distance to compute the dispersion coefficients. The use of micrometeorological variables instead of the empirical formulas, and the impacts from surface roughness on the Pasquill-Gifford dispersion parameters produced similar trends near each facility. At Flint Hills West, benzene concentrations were reduced; near Valero East, benzene increased. Further downwind, benzene concentrations tended to be higher with micrometeorological variables, but lower with the roughness effects.

Theoretically, micrometeorological variables should produce better results than the use of empirical formulas and classed bins, if the meteorological network is dense and accurate. Considering that there were eight surface meteorology stations near the Port of Corpus Christi, micrometeorological variables to compute the dispersion parameters seemed to be the most reasonable choice.

Other options included the use of slugs, which are elongated puffs useful for near-field modeling. The slug impact was small near the emission sources in comparison to the effects from micrometeorological variables and required 4 times more computational time; therefore, slugs were not used. The options for puff splitting and vertical shear above the stack tops had no impact on benzene and were turned off.

The CALPUFF configuration with the 2005 TCEQ Photochemical Modeling EI and micrometeorological variables was the most favorable and was used to simulate the October 1 – November 30, 2006 episode. The highest hourly benzene concentration at a discrete receptor was 34 ppb on October 22.

CALPUFF was run five more times using emissions from each of the five facilities emitting the most benzene. Flint Hills West emitted the most benzene and was responsible for the highest concentration (53 ppb) in the domain located in the same grid cell as the facility. Excluding grid cells containing the associated facility, Citgo East contributed the most to a gridded receptor at 23 ppb. Among the discrete receptors, Valero East contributed the most at 28 ppb benzene to a school with LCP coordinates of (253.6, -1333.9) at midnight on October 22 – the same discrete receptor and hour as the episode peak from all sources.

4. AERMOD MODELING

AERMOD was used to predict benzene concentration in the Corpus Christi region for a two-month period due to emissions of benzene by chemical plants and refineries in the region. This chapter presents a brief overview of the AERMOD modeling system, a description of the emissions inventory, the model setup specifications, tables of maximum predicted concentrations of benzene at discrete receptors and contour plots of predicted maximum concentrations of benzene over the region.

AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer (PBL) turbulence structure and scaling concepts. It can treat both surface and elevated sources, and both simple and complex terrain. The AERMOD modeling system consists of one main program (AERMOD) and three pre-processors (AERSURFACE, AERMAP and AERMET).

AERSURFACE is the preprocessor used to process land cover data to determine the surface characteristics (i.e., albedo, Bowen ratio and surface roughness) for use in the meteorological preprocessor, AERMET.

AERMET is used to calculate PBL parameters (friction velocity, Monin-Obukhov length, convective velocity scale, temperature scale, mixing height, and surface heat flux), based on input surface characteristics from AERSURFACE, as well as standard meteorological observations (wind speed, wind direction, temperature and cloud cover).

AERMAP is the terrain preprocessor for AERMOD. AERMAP determines the elevation for each source and the elevation and terrain height scale (h_c) for each receptor.

AERMOD uses PBL parameters calculated by AERMET and similarity expressions to calculate vertical profiles of wind speed, lateral and vertical turbulent fluctuations, potential temperature gradient, and potential temperature. AERMOD uses the hill height scale (h_c) determined by AERMAP to calculate the critical dividing streamline height (H_c).

4.1. AERMOD Inputs

The AERMOD modeling domain was defined to cover approximately the same region as the CALPUFF modeling domain that was defined for another part of this project. The CALPUFF domain is specified in the Lambert Conformal Conic (LCC) Projection whereas AERMOD requires a Geographical Coordinate System or a Universal Transverse Mercator (UTM) Projection. The projection chosen for the AERMOD domain is NAD83 UTM14, and the domain is defined as a 72km square with the South West corner at the point (612km, 3043km) as shown in Figure 4-1.

The AERMOD domain is shifted slightly west from the CALPUFF domain because Digital Elevation Maps (DEMS) of the easternmost region were not readily available.

Figure 4-1. Corpus Christi Regional Modeling Domain. The black dashed boxed is the CALPUFF domain, and the red solid box is the AERMOD modeling domain.

The benzene emission rates and source characteristics for modeling were obtained from the 2005 TCEQ Photochemical Modeling inventory. There were 1066 point source stacks in the inventory, but 34 stacks were outside of the modeling domain and were removed. Stack locations were converted to UTM coordinates, grouped by facility, and renamed so stacks within certain facilities could be referenced in AERMOD as a range of sources for source apportionment analysis.

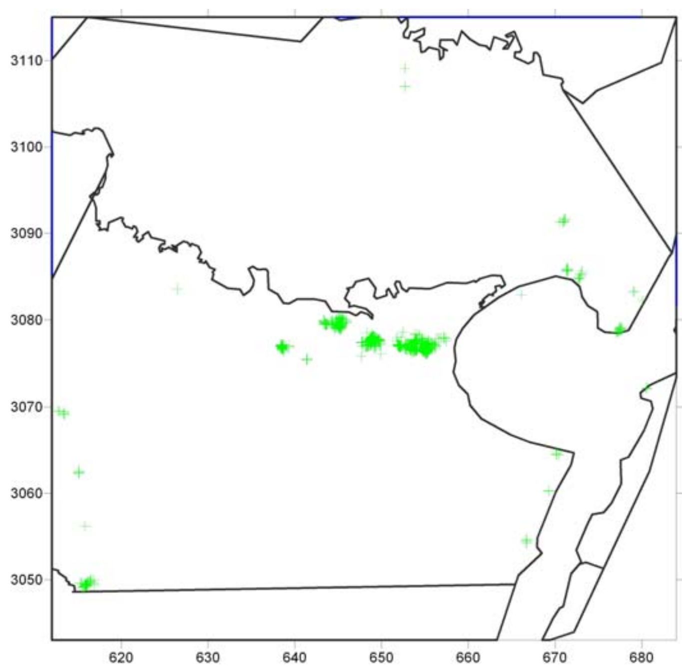


Figure 4-2. Locations of all emission sources used in AERMOD.

AERMAP

AERMAP is the terrain preprocessor for AERMOD. AERMAP determines the terrain base elevation for each receptor and source and calculates the hill height scale value (h_c) for each receptor. The hill height scale value is used by AERMOD to calculate the critical dividing streamline height (H_c). We used the current regulatory version of AERMAP (Version 06341), which is available from the U.S. Environmental Protection Agency's (EPA) internet site located at http://www.epa.gov/scram001/dispersion_related.htm. AERMAP requires an input runstream file, which directs the actions of AERMAP, and digital terrain data. Following is a summary of the input runstream file options and digital terrain data.

Digital Terrain Data

AERMAP requires contiguous coverage of the modeling domain with digital terrain data. We used 46 digital elevation model (DEM) files to cover the modeling domain. We selected the 7.5-minute North American Datum of 1927 (NAD27) format with 30 meter resolution. The DEM data files are available from either of the following internet sites: http://www.mapmart.com or http://www.webgis.com. The specific DEM files used to cover the modeling domain are listed in the AERMAP input runstream file, which is included as Appendix C.

Anchor Coordinates and NADA Parameter

The ANCHORXY keyword is used to relate the origin of the user-specified coordinate system for the receptors and sources to the UTM coordinate system, including specification of the reference datum for the receptors and sources through the NADA parameter. The NADA parameter specifies the horizontal datum that was used to establish the coordinates of the anchor point, which was set to 4, representing datum NAD83. The anchor coordinates were defined at the southwest corner of the modeling domain

Receptors and Sources

Discreet sensitive receptor locations were provided by UT in GCS coordinates, which were assumed to be in NAD83. Source locations, in GCS coordinates, were taken from the 2005 TCEQ Photochemical Modeling inventory.

In addition to the discreet sensitive receptors, a Cartesian grid of receptors with four kilometer grid spacing was output for quality assurance and contour mapping purposes.

AERSURFACE

AERSURFACE was not run for the Corpus Christi Regional Modeling demonstration case. Instead, the Texas Commission on Environmental Quality (TCEQ) recommended values for albedo (0.18) and Bowen ratio (0.75) for San Patricio County[1] were used. The surface roughness value was set to 1.0, which is indicative of typical urban/industrial areas.

These values for albedo, Bowen ration and surface roughness are representative of the entire modeling domain. The TCEQ used Matthews' (NASA) relationships to obtain average noontime albedo values from typical vegetation coverage in Texas. Bowen ratios have already been determined in Texas based on water models that include rainfall, surface runoff, and other

[1] ftp://ftp.tceq.state.tx.us/pub/OPRR/APD/AERMET/AERMETv06341/BackgroundInformation/aermet.pdf

factors. The TCEQ suggests a range of surface roughness values for urban/industrial areas of 0.7 to 1.5 m, with a suggested value of 1.0 m. For rural/suburban areas, the TCEQ suggests a value of 0.5 m.

AERMET

AERMET is the three-stage meteorological data processor for AERMOD. AERMET processes meteorological data and estimates planetary boundary layer (PBL) parameters for use in AERMOD. Gary McGaughey of UT performed the AERMET processing using the current regulatory version of AERMET (Version 06341), which is available from the EPA's internet site located at http://www.epa.gov/scram001/dispersion_related.htm. AERMET requires an input runstream file, which directs the actions of AERMET, and meteorological observations. Following is a summary of the AERMET meteorological observations. The Stage 1, 2 and 3 input runstream files are included as Appendix D.

Meteorological Observations

The following surface, upper air and on-site meteorological data were used in the AERMET processing for the period from October 1 through November 30, 2006:

- Surface: Corpus Christi International Airport (12924) TD-3505 format
- Upper Air : Corpus Christi International Airport (12924) FSL format
- On-Site: Solar Estates (C633) and Oak Park (C634) meteorological monitors

The two On-Site monitors were processed individually for each AERMET run, resulting in two sets of AERMET output files to be used by AERMOD, one corresponding to Solar Estates On-Site monitor and the other corresponding to the Oak Park monitor.

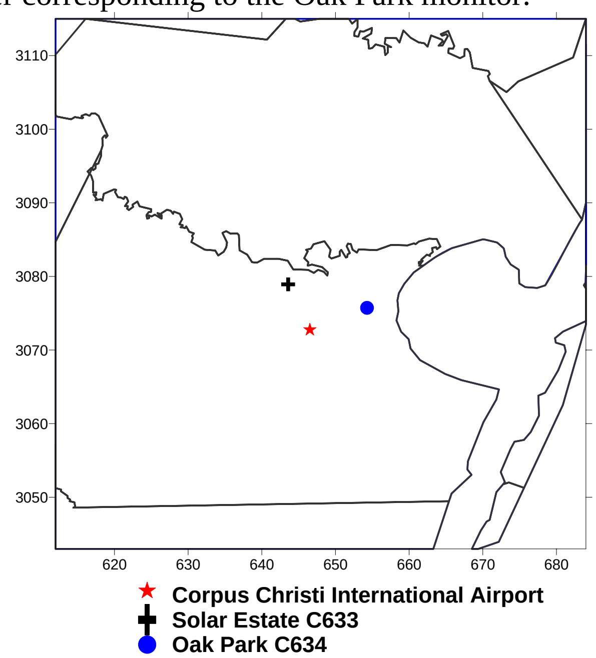


Figure 4-3. Location of the meteorological sites.

AERMOD

AERMOD is a steady-state plume dispersion model. AERMOD uses a Gaussian distribution in the horizontal and vertical directions in the stable boundary layer (SBL). In the convective boundary layer (CBL), AERMOD uses a Gaussian distribution in the horizontal direction, but a bi-Gaussian probability distribution function (pdf) in the vertical direction. The current regulatory version of AERMOD (Version 07026) was downloaded from the EPA's internet site located at http://www.epa.gov/scram001/dispersion_prefrec.htm#aermod and used in this study.

To test AERMOD predicted concentrations sensitivity to the choice of On-Site meteorological site, AERMOD was run twice, once using AERMET files generated with Solar Estates On-Site monitor data and once using the AERMET files generated with the Oak Park On-Site monitor data. AERMOD requires an input runstream file, which directs the actions of AERMOD. Following is a summary of the AERMOD input runstream file options.

Control Options

We specified the following control options.

- Terrain: Elevated (from AERMAP processing)
- Pollutant: Benzene
- Averaging Periods: 1-hour and 8-hour
- Dispersion Options: Concentration
Deposition (Dry, Wet and Total)

To model deposition, the TOXICS keyword must be specified. Additional information about the definition of seasons and land use around the receptors also must be provided when using the gaseous deposition algorithms. The season definition values are specified through the GDSEASON keyword. The following default season definition values were used:

- Seasonal Category 1 (Midsummer with lush vegetation): June, July, August
- Seasonal Category 2 (Autumn with unharvested cropland): September, October, November
- Seasonal Category 3 (Late autumn after frost and harvest, or winter with no snow): December, January, February
- Seasonal Category 5 (Transitional spring): March, April, May

The land use categories are defined by wind direction through the GDLANUSE keyword. A land use category of 5 (suburban areas, grassy) was assigned to each of the 36 wind direction sectors (every 10 degrees) for all receptors.

Source Options
The INCLUDE keyword was used to include location (UTM coordinates) and elevation information on the sources from the AERMAP processing. Source characteristics were obtained from the 2005 TCEQ Photochemical Modeling inventory. Parameters for the gaseous deposition of benzene are listed below for all sources[2]:

- Diffusivity in air (D_a): 0.08962 cm^2/s
- Diffusivity in water (D_w): 104,000 cm^2/s
- Cuticular resistance (r_{cl}): 25,100 s/cm
- Henry's Law Constant: 557 $Pa\text{-}m^3/mol$

The default output units for deposition are in grams per square meter (g/m^2). The default output units result in very low deposition values. Therefore, the DEPOUNIT keyword was applied to convert the default output units to microgram per square meter ($\mu g/m^2$).

AERMOD automatically generates a source group containing all modeled sources. Five additional source groups were created, corresponding to the individual facilities with the highest emissions in order to track their individual contributions. The six source groups are:

- All sources
- Flint Hills West
- Citgo East
- Valero East
- Valero West
- Koch Petroleum

Receptor Options
AERMAP was used to define the receptor location (UTM coordinates), elevation and hill height scale values.

Meteorology Options
Surface meteorological data (TC_C633.sfc, TC_C634.sfc) and profile (TC_C633.pfl, TC_C634.prf) meteorological data files were generated by AERMET for the period from October 1 through November 30, 2006.

Output Options
Output tables listed the highest concentration for each receptor for each averaging period (i.e., 1-hour and 8-hour). The table is included in the AERMOD output file (*.OUT). Plot files list concentrations according to receptor location for different averaging periods and source groups. Plot files are used to make contour maps.

The AERMOD input runstream file is included as Appendix E.

[2] Argonne National Laboratory. 2002. *Deposition Parameterizations for the Industrial Source Complex (ISC3) Model*. Argonne, IL.

4.2. MODELING RESULTS

Tables 4-1 and 4-2 list the highest benzene concentrations predicted by AERMOD during the two month episode when using On-Site meteorological data from Solar Estates (C633) and from Oak Park (C634), respectively. Contributions from all sources and from each of the five largest facilities were extracted from a single run.

When meteorology came from Solar Estates, the highest benzene concentration at discrete receptors from all sources occurred on November 16 at 26.7 ppb. Using Oak Park meteorology, the highest concentration was 23% higher at 32.9 ppb, occurring two dates later. Among the peak contributions from the five individual facilities, Oak Park meteorology nearly doubled each benzene peak compared to Solar Estates meteorology.

Koch Petroleum was the only facility where its peak contribution occurred on the same date and discrete receptor. Flint Hills West and Valero East each had peaks at the same receptor, but the run using Oak Park meteorology had higher peaks two days later.

Contributions from Citgo East to discrete receptors were the highest among the five facilities in both runs, even though Flint Hills West and Valero East emitted more benzene. Proximity to the discrete receptors was very important. Similarly, Koch Petroleum's peak contribution to discrete receptors was higher than Valero West in both runs.

Table 4-1. Highest hourly benzene concentration from all discrete receptors using AERMOD with meteorology from Solar Estates (C633).

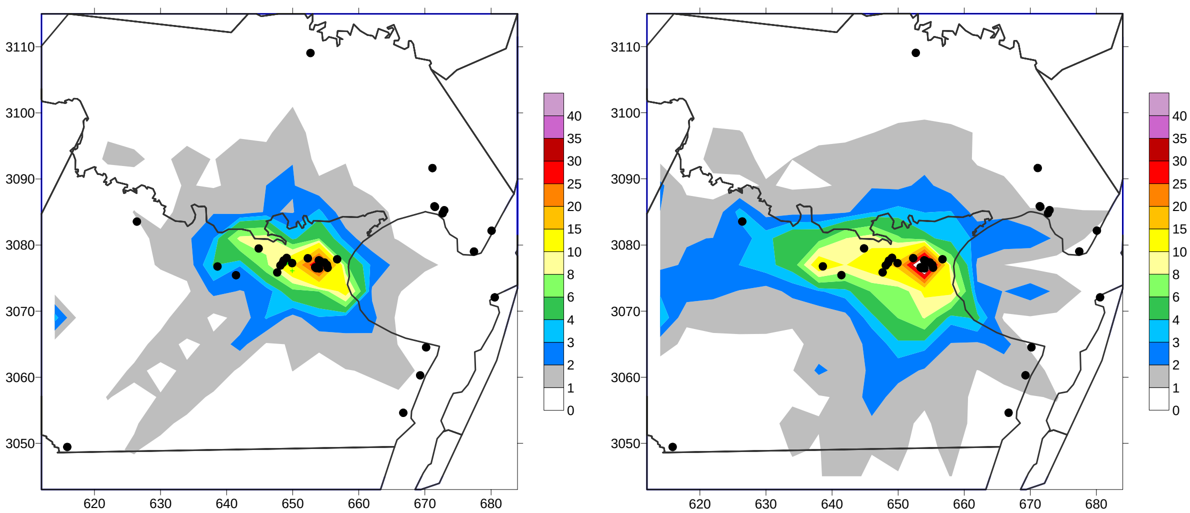
Source Group	peak 1-hr conc [ppb]	Date	UTMx [m]	UTMy [m]
All Sources	26.69	16-Nov	655185	3075797
Flint Hills West	11.55	16-Nov	645385	3078075
Citgo East	14.37	16-Nov	656425	3075136
Valero East	11.80	4-Oct	652985	3076600
Valero West	3.80	14-Oct	650765	3076849
Koch Petroleum	5.01	18-Nov	655185	3075797

Table 4-2. Highest hourly benzene concentration from all discrete receptors using AERMOD with Oak Park meteorology (C634).

Source Group	peak 1-hr conc [ppb]	Date	UTMx [m]	UTMy [m]
All Sources	32.86	18-Nov	652985	3076600
Flint Hills West	26.22	6-Nov	645385	3078075
Citgo East	29.34	18-Nov	654500	3075788
Valero East	24.92	6-Nov	652985	3076600
Valero West	6.79	13-Nov	645385	3078075
Koch Petroleum	12.85	18-Nov	655185	3075797

Contour plots of the episode maximum hourly benzene at the 4-km gridded receptors are shown in Figure 4-4 for AERMOD with Solar Estates (left) and Oak Park (right) meteorology. Black dots represent the locations of each emission source. The largest benzene using Oak Park meteorology was 44 ppb – 12 ppb more than when using Solar Estates. Oak Park also predicted higher concentrations further west.

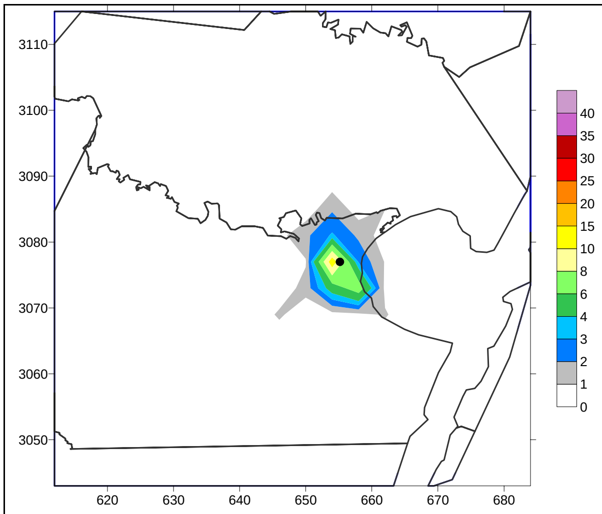
Figure 4-5 compares the peak contributions to gridded receptors from each of the individual facilities. The left and right sides use Solar Estates and Oak Park meteorology, respectively. AERMOD with Oak Park meteorology had higher concentrations away from each source compared to the run using Solar Estates meteorology, but were not too different immediately around each facility, except at Citgo East, where the peak gridded receptor became almost three times larger (32 ppb vs. 11 ppb). Citgo East's peak contribution when using Oak Park meteorology exceeded the maximum contribution from all sources when using Solar Estates meteorology for both sets of discrete and gridded receptors.



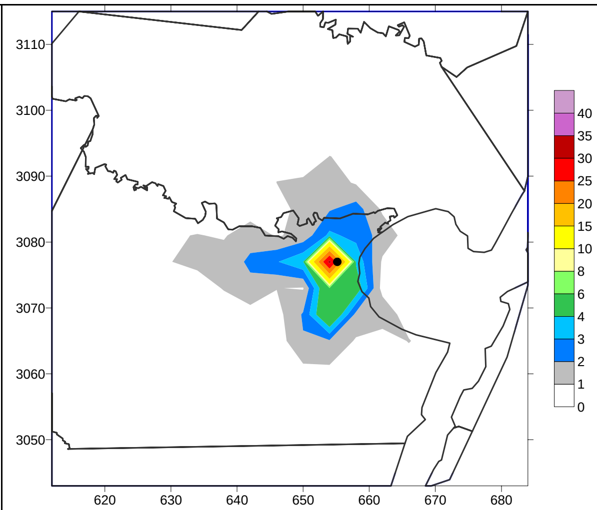
All Sources
Maximum concentration: 31.752 ppb

All Sources
Maximum concentration: 43.537 ppb

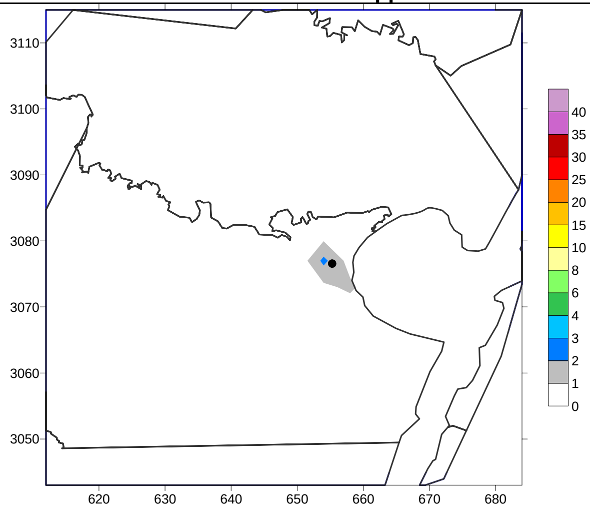
Figure 4-4. Contour plots of the maximum 1-hr average benzene concentration [ppb] at gridded receptors using AERMOD with Solar Estates meteorological data (left) and Oak Park (right).



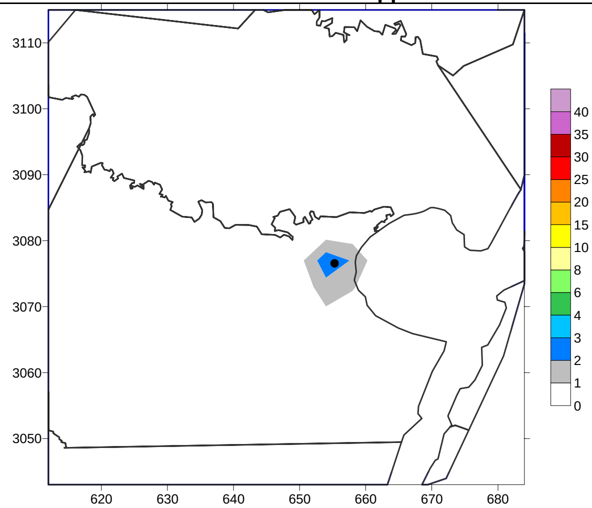
Citgo East
Maximum concentration: 11.383 ppb



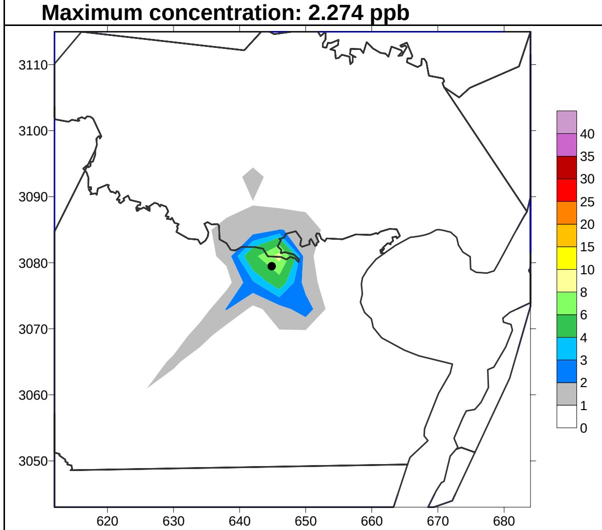
Citgo East
Maximum concentration: 31.754 ppb



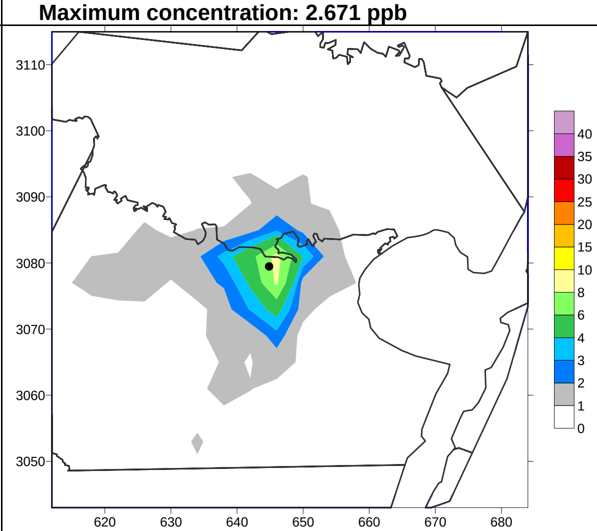
Koch Petroleum
Maximum concentration: 2.274 ppb



Koch Petroleum
Maximum concentration: 2.671 ppb



Flint Hills West
Maximum concentration: 8.767 ppb



Flint Hills West
Maximum concentration: 8.667 ppb

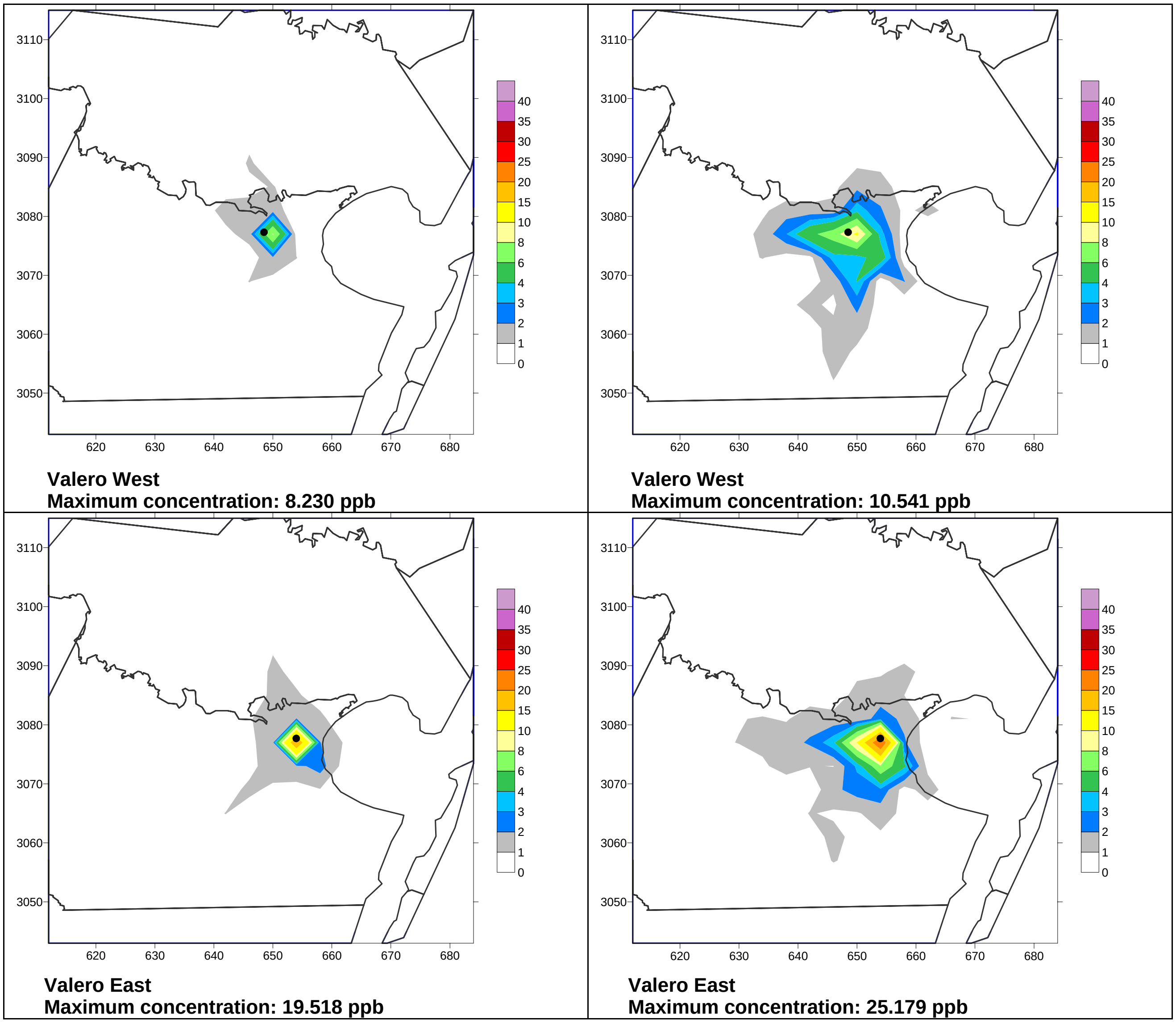


Figure 4-5. Contour plots of the maximum 1-hr average benzene contribution [ppb] at gridded receptors from each of the top five facilities. Left side shows AERMOD with Solar Estates meteorology; right side uses Oak Park meteorology.

4.3. CONCLUSIONS

The AERMOD results are highly sensitive to the choice of the on-site meteorological monitor used in the AERMET modeling. The two stations are located only approximately 10km apart and yet the maximum concentrations predicted using Oak Park meteorology are approximately double those predicted using Solar Estates meteorology at the discrete receptors for the 5 largest facilities. This demonstrates that using only one on-site meteorological monitor in addition to one other monitor (Corpus Christi International Airport monitor) to characterize the meteorological conditions within a 72 x 72km domain is a limitation that produces a high level of uncertainty in the results.

5. SUMMARY AND CONCLUSIONS

Numerous chemical plants, refineries, and other industrial facilities near the Corpus Christi ship channel release toxic air pollutants like benzene. Many of these facilities are located blocks away from residential areas. Two Gaussian dispersion models – CALPUFF and AERMOD – were used to predict the concentrations of benzene from these plants to populated areas, schools, hospitals, and clinics in Corpus Christi.

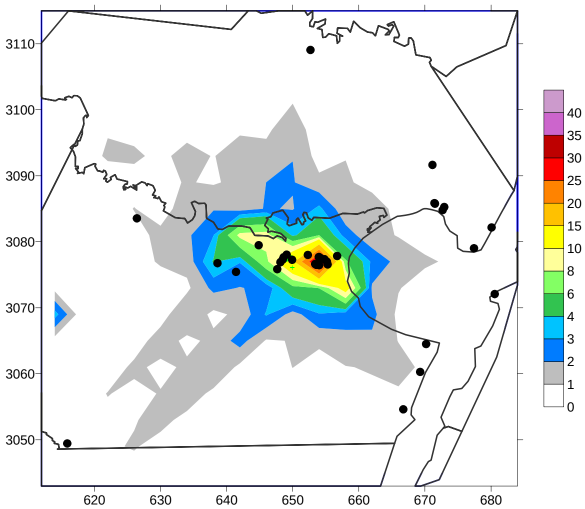
The meteorological preprocessor to CALPUFF is CALMET. CALMET sensitivity tests were performed to develop a model configuration that yielded the most acceptable wind fields in the Corpus Christi domain. Options that improved the wind fields included the use of high-resolution coastline data, the relocation of the buoy closer to the domain, terrain kinematics, and additional smoothing in the higher layers. All evaluations were based on a subjective analysis since all the meteorological data was being nudged into the model, leaving no data for an independent evaluation. Favorable CALPUFF options included the use of the STARS inventory to extract emissions and micrometeorological variables to compute the dispersion coefficients.

CALPUFF and AERMOD were run for a two-month period from October 1 to November 30, 2006 to evaluate the impacts of benzene from the numerous chemical plants and refineries near Corpus Christi. Benzene contributions from all sources and from each of the five largest facilities (Flint Hills West, Citgo East, Valero East and West, and Koch Petroleum) were examined.

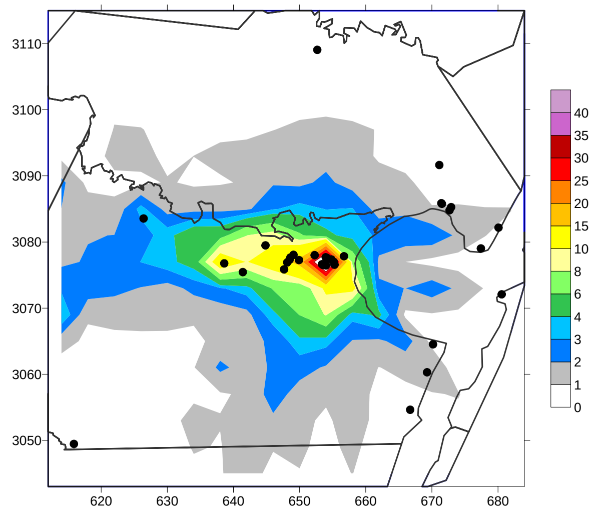
Two AERMOD runs were evaluated to compare the impacts when using different meteorology. One AERMOD run used meteorology from Solar Estates (C633), which was near the Flint Hills West facility, and a second run used meteorology from Oak Park (C634), which was close to the Citgo East and Valero East facilities.

Figure 5-1 compares the spatial plots of the episode maximum benzene concentration from CALPUFF and the two AERMOD runs. CALPUFF used gridded receptors at 1 km resolution; AERMOD used 4 km resolution. CALPUFF predicted two peaks – one over Flint Hills West, which was the largest benzene source, and near the Valero East and Citgo East facilities, which were located close together and represented the second and third largest sources, respectively. The CALPUFF peak of 53 ppb over Flint Hills West was the highest among the three runs. Both AERMOD runs simulated only one local peak; neither predicted a second peak over Flint Hills West, despite being the largest source.

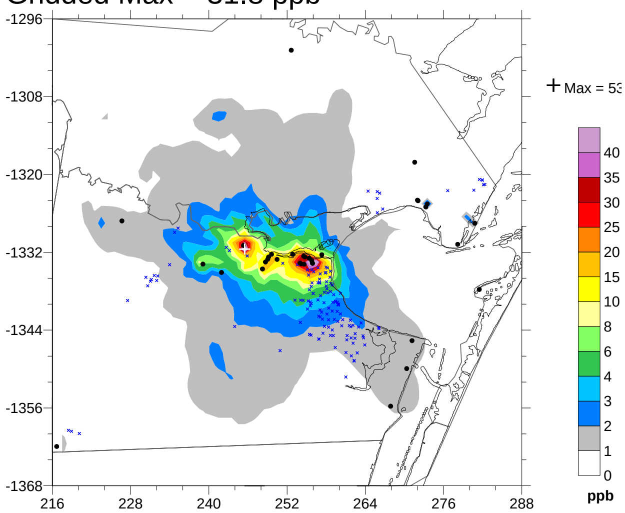
The AERMOD run using Oak Park meteorology dispersed benzene further downwind than CALPUFF or the AERMOD run with Solar Estates meteorology. The AERMOD run with Oak Park meteorology predicted higher concentrations than the run with Solar Estates in most areas, particularly to the west.



AERMOD (Solar Estates meteorology)
Gridded Max = 31.8 ppb



AERMOD (Oak Park meteorology)
Gridded Max = 43.5 ppb



CALPUFF. Gridded Max = 53.2 ppb

Figure 5-1. Spatial plots of the episode maximum benzene concentration from two AERMOD runs (top) and from CALPUFF (bottom).

Table 5-1 compares the episode maximum 1-hour benzene concentration among all discrete receptors between CALPUFF and the two AERMOD runs. The maximum contribution from all sources in the two AERMOD runs was higher when using Oak Park meteorology (33 ppb) compared to Solar Estates (27 ppb). CALPUFF's highest benzene concentration from all sources was slightly higher at 34 ppb. The dates of the peak concentration differed in all three runs.

When examining contributions from individual facilities to the discrete receptors, the AERMOD run using Oak Park meteorology predicted peak concentrations that were typically twice the large as the AERMOD run with Solar Estates meteorology. CALPUFF tended to predict peak contributions in between the two AERMOD runs, except from the Valero East facility, whose peak contribution of 28 ppb to a discrete receptor was higher than in either AERMOD run. Citgo East produced the highest benzene concentration from an individual facility to a discrete receptor in both AERMOD runs; Valero East was highest in CALPUFF. Dates of the peak concentrations in CALPUFF and AERMOD never matched.

Table 5-1. Maximum benzene concentrations at discrete receptors from individual facilities using AERMOD and CALPUFF.

Facility	AERMOD C633 Met	Date	AERMOD C634 Met	Date	CALPUFF	Date
All	26.69	Nov 16	32.86	Nov 18	34.20	Oct 22
Flint Hills West	11.55	Nov 16	26.22	Nov 6	19.10	Nov 18
Citgo East	14.37	Nov 16	29.34	Nov 18	18.98	Nov 17
Valero East	11.80	Oct 4	24.92	Nov 6	27.67	Oct 22
Valero West	3.80	Oct 14	6.79	Nov 13	6.01	Oct 6
Koch Petroleum	5.01	Nov 18	12.85	Nov 18	9.50	Nov 6

AERMOD is limited to one surface meteorological site to represent the entire domain. Based on the vast differences in benzene concentration when using Solar Estates meteorology instead of Oak Park, which are only about 10 km apart, there is a high level of uncertainty in the results arising from this limitation in AERMOD.

CALPUFF uses three-dimensional wind and temperature fields that incorporate meteorological data from multiple sites, which is a major advantage over AERMOD. This task did not compare model results to benzene observations to evaluate model performance. Benzene emissions from sources other than these refineries, chemical and other industrial plants were also not considered in this phase of work.

Two options not selected in the CALPUFF configuration are the use of slugs, which can be thought of as continuously-emitting elongated puffs that are important for near-field modeling but require four times more computational time, and building downwash, for which inputs were not available.

The use of slugs was not as responsive as the use of micrometeorological variables to compute the spread parameters. If slugs were to be used, it could be activated only on north wind dates to same computational time, since most of the discrete receptors are located to the south of the major facilities.

6. References

Colville, C. "Technical Description of AERMOD Setup for Corpus Christi Regional Modeling." ENVIRON International Corporation. 2008.

Scire, J; Robe, F.; Fernau, M.; Yamartino, R. "A User's Guide for the CALMET Meteorological Model (Version 5)." Earth Tech, Inc. 2000.

Scire, J.; Strimaitis, D.; Yamartino, R. "A User's Guide for the CALPUFF Dispersion Model (Version 5)." Earth Tech, Inc. 2000.

USEPA. "User's Guide for the Emissions Modeling System for Hazardous Air Pollutants (EMS-HAP) Version 2.0." 2002.

APPENDIX A
CALMET Run 13 Input File

```
Corpus Christi CALMET at 1 km resolution.  run13
061001
72 x 72
---------------- Run title (3 lines) ------------------------------------------
--

                    CALMET MODEL CONTROL FILE
                    --------------------------

------------------------------------------------------------------------------
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INPUT GROUP: 0 -- Input and Output File Names


Subgroup (a)
------------
Default Name  Type          File Name
------------  ----          ---------
GEO.DAT       input    ! GEODAT=
/etai2/cc_calpuff/calmet/preproc/geo/makegeo/output/geo.cc.coast2.1km.dat !
SURF.DAT      input    ! SRFDAT=
/etai2/cc_calpuff/calmet/preproc/met/smerge/output/surf.all.dat.a0  !
CLOUD.DAT     input    * CLDDAT=            *
PRECIP.DAT    input    ! PRCDAT=
/etai2/cc_calpuff/calmet/preproc/met/pmerge/output/precip.2006.dat !
WT.DAT        input    * WTDAT=             *

CALMET.LST    output   ! METLST= ../output/run13/msg.calmet.run13.061001.lst
!
CALMET.DAT    output   ! METDAT= ../output/run13/calmet.cc.run13.061001.dat
!
PACOUT.DAT    output   * PACDAT=            *

All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE

NUMBER OF UPPER AIR & OVERWATER STATIONS:

    Number of upper air stations (NUSTA)  No default     ! NUSTA =  1  !
    Number of overwater met stations
                                 (NOWSTA) No default     ! NOWSTA =  1  !

NUMBER OF PROGNOSTIC and IGF-CALMET FILEs:

    Number of MM4/MM5/3D.DAT files
                                 (NM3D) No default       ! NM3D =  0  !

    Number of IGF-CALMET.DAT files
                                 (NIGF)   No default     ! NIGF =  0  !

                       !END!
------------------------------------------------------------------------------
---
Subgroup (b)
---------------------------------
Upper air files (one per station)
---------------------------------
```

```
Default Name  Type       File Name
------------  ----       ---------
UP1.DAT       input     1  !
UPDAT=/etai2/cc_calpuff/calmet/preproc/met/read62/output/up.crp.2006.dat.a0!
!END!

-------------------------------------------------------------------------------
---
Subgroup (c)
-----------------------------------------
Overwater station files (one per station)
-----------------------------------------
Default Name  Type       File Name
------------  ----       ---------
SEA1.DAT       input     1  ! SEADAT=
/etai2/cc_calpuff/calmet/preproc/met/buoy/output/sea.42020.2006.dat.a0.moved
!    !END !
-------------------------------------------------------------------------------
---
Subgroup (d)
------------------------------------------------
MM4/MM5/3D.DAT files (consecutive or overlapping)
------------------------------------------------
Default Name  Type       File Name
------------  ----       ---------
MM51.DAT       input     1  * M3DDAT= *    *END*
-------------------------------------------------------------------------------
---
Subgroup (e)
-------------------------------------------------
IGF-CALMET.DAT files (consecutive or overlapping)
-------------------------------------------------
Default Name  Type       File Name
------------  ----       ---------
IGFn.DAT       input     1  * IGFDAT=CALMET0.DAT *    *END*
-------------------------------------------------------------------------------
---
Subgroup (f)
----------------
Other file names
----------------

Default Name  Type       File Name
------------  ----       ---------
DIAG.DAT      input      * DIADAT=                  *
PROG.DAT      input      * PRGDAT=                  *

TEST.PRT      output     * TSTPRT=                  *
TEST.OUT      output     * TSTOUT=                  *
TEST.KIN      output     * TSTKIN=                  *
TEST.FRD      output     * TSTFRD=                  *
TEST.SLP      output     * TSTSLP=                  *
DCST.GRD      output     * DCSTGD=                  *

-------------------------------------------------------------------------------
---
NOTES: (1) File/path names can be up to 70 characters in length
       (2) Subgroups (a) and (f) must have ONE 'END' (surrounded by
           delimiters) at the end of the group
       (3) Subgroups (b) through (e) are included ONLY if the corresponding
           number of files (NUSTA, NOWSTA, NM3D, NIGF) is not 0, and each
must have
```

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        an 'END' (surround by delimiters) at the end of EACH LINE

                     !END!


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INPUT GROUP: 1 -- General run control parameters
--------------


     Starting date:   Year (IBYR) -- No default       ! IBYR=  2006  !
                     Month (IBMO) -- No default       ! IBMO=  10  !
                       Day (IBDY) -- No default       ! IBDY=  1  !
                      Hour (IBHR) -- No default       ! IBHR=  1  !

     Note: IBHR is the time at the END of the first hour of the simulation
           (IBHR=1, the first hour of a day, runs from 00:00 to 01:00)

     Base time zone        (IBTZ) -- No default       ! IBTZ=  6  !
        PST = 08, MST = 07
        CST = 06, EST = 05

     Length of run (hours) (IRLG) -- No default       ! IRLG=  24  !

     Run type            (IRTYPE) -- Default: 1       ! IRTYPE=  1  !

        0 = Computes wind fields only
        1 = Computes wind fields and micrometeorological variables
            (u*, w*, L, zi, etc.)
        (IRTYPE must be 1 to run CALPUFF or CALGRID)

     Compute special data fields required
     by CALGRID (i.e., 3-D fields of W wind
     components and temperature)
     in additional to regular            Default: T    ! LCALGRD = T !
     fields ? (LCALGRD)
     (LCALGRD must be T to run CALGRID)

      Flag to stop run after
      SETUP phase (ITEST)             Default: 2       ! ITEST=  2   !
      (Used to allow checking
      of the model inputs, files, etc.)
      ITEST = 1 - STOPS program after SETUP phase
      ITEST = 2 - Continues with execution of
                  COMPUTATIONAL phase after SETUP


     Test options specified to see if
     they conform to regulatory
     values? (MREG)                   No Default       ! MREG =  1   !

        0 = NO checks are made
        1 = Technical options must conform to USEPA guidance
                  IMIXH    -1       Maul-Carson convective mixing height
                                    over land; OCD mixing height overwater
                  ICOARE   0        OCD deltaT method for overwater fluxes
                  THRESHL  0.0      Threshold buoyancy flux over land needed
                                    to sustain convective mixing height
growth
```

```
!END!

-------------------------------------------------------------------------------
--

INPUT GROUP: 2 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                     Default: UTM    ! PMAP = LCC  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                    Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                   Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                   No Default      ! IUTMZN =  -99   !

     Hemisphere for UTM projection?
     (Used only if PMAP=UTM)
     (UTMHEM)                   Default: N      ! UTMHEM = N  !
         N   :  Northern hemisphere projection
         S   :  Southern hemisphere projection

     Latitude and Longitude (decimal degrees) of projection origin
     (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
     (RLAT0)                    No Default      ! RLAT0 = 40N  !
     (RLON0)                    No Default      ! RLON0 = 100W  !

         TTM :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         LCC :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         PS  :  RLON0 identifies central (grid N/S) meridian of projection
                RLAT0 selected for convenience
         EM  :  RLON0 identifies central meridian of projection
                RLAT0 is REPLACED by 0.0N (Equator)
         LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
                RLAT0 identifies latitude of tangent-point of mapping plane

     Matching parallel(s) of latitude (decimal degrees) for projection
     (Used only if PMAP= LCC or PS)
     (XLAT1)                    No Default      ! XLAT1 = 30N  !
     (XLAT2)                    No Default      ! XLAT2 = 60N  !

         LCC :  Projection cone slices through Earth's surface at XLAT1 and
XLAT2
         PS  :  Projection plane slices through Earth at XLAT1
                (XLAT2 is not used)
```

```
     ----------
     Note:  Latitudes and longitudes should be positive, and include a
            letter N,S,E, or W indicating north or south latitude, and
            east or west longitude.  For example,
            35.9  N Latitude  =  35.9N
            118.7 E Longitude = 118.7E


     Datum-region
     ------------

     The Datum-Region for the coordinates is identified by a character
     string.  Many mapping products currently available use the model of the
     Earth known as the World Geodetic System 1984 (WGS-84).  Other local
     models may be in use, and their selection in CALMET will make its output
     consistent with local mapping products.  The list of Datum-Regions with
     official transformation parameters is provided by the National Imagery
and
     Mapping Agency (NIMA).

     NIMA Datum - Regions(Examples)
     ------------------------------------------------------------------------
------
     WGS-84    WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
     NAS-C     NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS
(NAD27)
     NAR-C     NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
     NWS-84    NWS 6370KM Radius, Sphere
     ESR-S     ESRI REFERENCE 6371KM Radius, Sphere

     Datum-region for output coordinates
     (DATUM)                    Default: WGS-84    ! DATUM = NWS-84  !


     Horizontal grid definition:
     ---------------------------

     Rectangular grid defined for projection PMAP,
     with X the Easting and Y the Northing coordinate

            No. X grid cells (NX)      No default     ! NX =   72  !
            No. Y grid cells (NY)      No default     ! NY =   72  !

     Grid spacing (DGRIDKM)            No default     ! DGRIDKM = 1. !
                                       Units: km

     Reference grid coordinate of
     SOUTHWEST corner of grid cell (1,1)

        X coordinate (XORIGKM)         No default     ! XORIGKM = 216.000 !
        Y coordinate (YORIGKM)         No default     ! YORIGKM = -1368.000 !
                                       Units: km


     Vertical grid definition:
     -------------------------

        No. of vertical layers (NZ)    No default     ! NZ =  14  !

        Cell face heights in arbitrary
        vertical grid (ZFACE(NZ+1))    No defaults
                                       Units: m
```

```
        ! ZFACE = 0.,18.0, 33.9, 85.0, 170.6, 256.9, 344.0, 431.8, 520.3,
                  609.7, 790.6, 1068.2, 1353.4, 2103.3, 3026.3  !

!END!


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INPUT GROUP: 3 -- Output Options
--------------


    DISK OUTPUT OPTION

       Save met. fields in an unformatted
       output file ?              (LSAVE)  Default: T     ! LSAVE = T !
       (F = Do not save, T = Save)

       Type of unformatted output file:
       (IFORMO)                            Default: 1    ! IFORMO =  1  !

            1 = CALPUFF/CALGRID type file (CALMET.DAT)
            2 = MESOPUFF-II type file     (PACOUT.DAT)


    LINE PRINTER OUTPUT OPTIONS:

       Print met. fields ?  (LPRINT)       Default: F     ! LPRINT = F !
       (F = Do not print, T = Print)
       (NOTE: parameters below control which
              met. variables are printed)

       Print interval
       (IPRINF) in hours                   Default: 1     ! IPRINF =  1  !
       (Meteorological fields are printed
        every  1  hours)


       Specify which layers of U, V wind component
       to print (IUVOUT(NZ)) -- NOTE: NZ values must be entered
       (0=Do not print, 1=Print)
       (used only if LPRINT=T)        Defaults: NZ*0
       ! IUVOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 , !
       -----------------------


       Specify which levels of the W wind component to print
       (NOTE: W defined at TOP cell face --  10  values)
       (IWOUT(NZ)) -- NOTE: NZ values must be entered
       (0=Do not print, 1=Print)
       (used only if LPRINT=T & LCALGRD=T)
       -----------------------------------
                                             Defaults: NZ*0
        ! IWOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 , !


       Specify which levels of the 3-D temperature field to print
       (ITOUT(NZ)) -- NOTE: NZ values must be entered
       (0=Do not print, 1=Print)
       (used only if LPRINT=T & LCALGRD=T)
       -----------------------------------
```

```
                                    Defaults: NZ*0
 ! ITOUT =  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0 ,  0  !

Specify which meteorological fields
to print
(used only if LPRINT=T)              Defaults: 0 (all variables)
-----------------------


  Variable            Print ?
                  (0 = do not print,
                   1 = print)
  --------        ------------------

!  STABILITY  =          0           ! - PGT stability class
!  USTAR      =          0           ! - Friction velocity
!  MONIN      =          0           ! - Monin-Obukhov length
!  MIXHT      =          0           ! - Mixing height
!  WSTAR      =          0           ! - Convective velocity scale
!  PRECIP     =          0           ! - Precipitation rate
!  SENSHEAT   =          0           ! - Sensible heat flux
!  CONVZI     =          0           ! - Convective mixing ht.


Testing and debug print options for micrometeorological module

   Print input meteorological data and
   internal variables (LDB)          Default: F       ! LDB = F !
   (F = Do not print, T = print)
   (NOTE: this option produces large amounts of output)

   First time step for which debug data
   are printed (NN1)                 Default: 1       ! NN1 =  1  !

   Last time step for which debug data
   are printed (NN2)                 Default: 1       ! NN2 =  1  !

   Print distance to land
   internal variables (LDBCST)       Default: F       ! LDBCST = F !
   (F = Do not print, T = print)
   (Output in .GRD file DCST.GRD, defined in input group 0)

Testing and debug print options for wind field module
(all of the following print options control output to
 wind field module's output files: TEST.PRT, TEST.OUT,
 TEST.KIN, TEST.FRD, and TEST.SLP)

   Control variable for writing the test/debug
   wind fields to disk files (IOUTD)
   (0=Do not write, 1=write)         Default: 0       ! IOUTD =  0  !

   Number of levels, starting at the surface,
   to print (NZPRN2)                 Default: 1       ! NZPRN2 =  0  !

   Print the INTERPOLATED wind components ?
   (IPR0) (0=no, 1=yes)              Default: 0       !  IPR0 =  0  !

   Print the TERRAIN ADJUSTED surface wind
   components ?
   (IPR1) (0=no, 1=yes)              Default: 0       !  IPR1 =  0  !

   Print the SMOOTHED wind components and
```

```
          the INITIAL DIVERGENCE fields ?
          (IPR2) (0=no, 1=yes)             Default: 0       !  IPR2 =  0  !

          Print the FINAL wind speed and direction
          fields ?
          (IPR3) (0=no, 1=yes)             Default: 0       !  IPR3 =  0  !

          Print the FINAL DIVERGENCE fields ?
          (IPR4) (0=no, 1=yes)             Default: 0       !  IPR4 =  0  !

          Print the winds after KINEMATIC effects
          are added ?
          (IPR5) (0=no, 1=yes)             Default: 0       !  IPR5 =  0  !

          Print the winds after the FROUDE NUMBER
          adjustment is made ?
          (IPR6) (0=no, 1=yes)             Default: 0       !  IPR6 =  0  !

          Print the winds after SLOPE FLOWS
          are added ?
          (IPR7) (0=no, 1=yes)             Default: 0       !  IPR7 =  0  !

          Print the FINAL wind field components ?
          (IPR8) (0=no, 1=yes)             Default: 0       !  IPR8 =  0  !

!END!


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INPUT GROUP: 4 -- Meteorological data options
--------------

    NO OBSERVATION MODE             (NOOBS)  Default: 0     ! NOOBS =  0   !
          0 = Use surface, overwater, and upper air stations
          1 = Use surface and overwater stations (no upper air observations)
              Use MM4/MM5/3D for upper air data
          2 = No surface, overwater, or upper air observations
              Use MM4/MM5/3D for surface, overwater, and upper air data

    NUMBER OF SURFACE & PRECIP. METEOROLOGICAL STATIONS

       Number of surface stations   (NSSTA)  No default     ! NSSTA =  18  !

       Number of precipitation stations
       (NPSTA=-1: flag for use of MM5/3D precip data)
                                    (NPSTA)  No default     ! NPSTA =  5  !

    CLOUD DATA OPTIONS
       Gridded cloud fields:
                                   (ICLOUD)  Default: 0     ! ICLOUD =  0  !
       ICLOUD = 0 - Gridded clouds not used
       ICLOUD = 1 - Gridded CLOUD.DAT generated as OUTPUT
       ICLOUD = 2 - Gridded CLOUD.DAT read as INPUT
       ICLOUD = 3 - Gridded cloud cover computed from prognostic fields

    FILE FORMATS

       Surface meteorological data file format
                                   (IFORMS)  Default: 2     ! IFORMS =  2  !
       (1 = unformatted (e.g., SMERGE output))
```

```
       (2 = formatted   (free-formatted user input))

       Precipitation data file format
                                   (IFORMP)  Default: 2     ! IFORMP =  2  !
       (1 = unformatted (e.g., PMERGE output))
       (2 = formatted   (free-formatted user input))

       Cloud data file format
                                   (IFORMC)  Default: 2     ! IFORMC =  2  !
       (1 = unformatted - CALMET unformatted output)
       (2 = formatted   - free-formatted CALMET output or user input)

!END!


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INPUT GROUP: 5 -- Wind Field Options and Parameters
--------------


    WIND FIELD MODEL OPTIONS
       Model selection variable (IWFCOD)     Default: 1      ! IWFCOD =  1  !
          0 = Objective analysis only
          1 = Diagnostic wind module

       Compute Froude number adjustment
       effects ? (IFRADJ)                    Default: 1      ! IFRADJ =  1  !
       (0 = NO, 1 = YES)

       Compute kinematic effects ? (IKINE)   Default: 0      ! IKINE  =  1  !
       (0 = NO, 1 = YES)

       Use O'Brien procedure for adjustment
       of the vertical velocity ? (IOBR)     Default: 0      ! IOBR =  0  !
       (0 = NO, 1 = YES)

       Compute slope flow effects ? (ISLOPE) Default: 1      ! ISLOPE  =  1
!
       (0 = NO, 1 = YES)

       Extrapolate surface wind observations
       to upper layers ? (IEXTRP)            Default: -4     ! IEXTRP = -4  !
       (1 = no extrapolation is done,
        2 = power law extrapolation used,
        3 = user input multiplicative factors
            for layers 2 - NZ used (see FEXTRP array)
        4 = similarity theory used
       -1, -2, -3, -4 = same as above except layer 1 data
            at upper air stations are ignored

       Extrapolate surface winds even
       if calm? (ICALM)                      Default: 0      ! ICALM  =  0  !
       (0 = NO, 1 = YES)

       Layer-dependent biases modifying the weights of
       surface and upper air stations (BIAS(NZ))
         -1<=BIAS<=1
       Negative BIAS reduces the weight of upper air stations
         (e.g. BIAS=-0.1 reduces the weight of upper air stations
       by 10%; BIAS= -1, reduces their weight by 100 %)
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       Positive BIAS reduces the weight of surface stations
         (e.g. BIAS= 0.2 reduces the weight of surface stations
       by 20%; BIAS=1 reduces their weight by 100%)
       Zero BIAS leaves weights unchanged (1/R**2 interpolation)
       Default: NZ*0
                                ! BIAS =  -1 ,  13*0. !

       Minimum distance from nearest upper air station
       to surface station for which extrapolation
       of surface winds at surface station will be allowed
       (RMIN2: Set to -1 for IEXTRP = 4 or other situations
        where all surface stations should be extrapolated)
                                            Default: 4.     ! RMIN2 = -1.0 !

       Use gridded prognostic wind field model
       output fields as input to the diagnostic
       wind field model (IPROG)             Default: 0      ! IPROG =  0  !
       (0 = No, [IWFCOD = 0 or 1]
        1 = Yes, use CSUMM prog. winds as Step 1 field, [IWFCOD = 0]
        2 = Yes, use CSUMM prog. winds as initial guess field [IWFCOD = 1]
        3 = Yes, use winds from MM4.DAT file as Step 1 field [IWFCOD = 0]
        4 = Yes, use winds from MM4.DAT file as initial guess field [IWFCOD =
1]
        5 = Yes, use winds from MM4.DAT file as observations [IWFCOD = 1]
        13 = Yes, use winds from MM5/3D.DAT file as Step 1 field [IWFCOD = 0]
        14 = Yes, use winds from MM5/3D.DAT file as initial guess field
[IWFCOD = 1]
        15 = Yes, use winds from MM5/3D.DAT file as observations [IWFCOD = 1]

       Timestep (hours) of the prognostic
       model input data   (ISTEPPG)         Default: 1      ! ISTEPPG =  1
!

       Use coarse CALMET fields as initial guess fields (IGFMET)
       (overwrites IGF based on prognostic wind fields if any)
                                            Default: 0      ! IGFMET =  0  !

    RADIUS OF INFLUENCE PARAMETERS

       Use varying radius of influence      Default: F      ! LVARY =  F!
       (if no stations are found within RMAX1,RMAX2,
        or RMAX3, then the closest station will be used)

       Maximum radius of influence over land
       in the surface layer (RMAX1)         No default      ! RMAX1 = 75. !
                                            Units: km
       Maximum radius of influence over land
       aloft (RMAX2)                        No default      ! RMAX2 = 75. !
                                            Units: km
       Maximum radius of influence over water
       (RMAX3)                              No default      ! RMAX3 = 100. !
                                            Units: km


    OTHER WIND FIELD INPUT PARAMETERS

       Minimum radius of influence used in
       the wind field interpolation (RMIN)  Default: 0.1    ! RMIN = 0.1 !
                                            Units: km
       Radius of influence of terrain
       features (TERRAD)                    No default      ! TERRAD = 1. !
```

```
                                              Units: km
       Relative weighting of the first
       guess field and observations in the
       SURFACE layer (R1)                     No default      ! R1 = 10. !
       (R1 is the distance from an            Units: km
       observational station at which the
       observation and first guess field are
       equally weighted)

       Relative weighting of the first
       guess field and observations in the
       layers ALOFT (R2)                      No default      ! R2 = 25. !
       (R2 is applied in the upper layers     Units: km
       in the same manner as R1 is used in
       the surface layer).

       Relative weighting parameter of the
       prognostic wind field data (RPROG)     No default      ! RPROG = 0. !
       (Used only if IPROG = 1)               Units: km
       ------------------------

       Maximum acceptable divergence in the
       divergence minimization procedure
       (DIVLIM)                               Default: 5.E-6  ! DIVLIM= 5.0E-
06 !

       Maximum number of iterations in the
       divergence min. procedure (NITER)      Default: 50     ! NITER =  50  !

       Number of passes in the smoothing
       procedure (NSMTH(NZ))
       NOTE: NZ values must be entered
                                       Default: 2,(mxnz-1)*4 ! NSMTH = 2 ,
6*4, 7*6  !

       Maximum number of stations used in
       each layer for the interpolation of
       data to a grid point (NINTR2(NZ))
       NOTE: NZ values must be entered        Default: 99.    ! NINTR2 = 14*99
!

       Critical Froude number (CRITFN)        Default: 1.0    ! CRITFN = 1. !

       Empirical factor controlling the
       influence of kinematic effects
       (ALPHA)                                Default: 0.1    ! ALPHA = 0.1 !

       Multiplicative scaling factor for
       extrapolation of surface observations
       to upper layers (FEXTR2(NZ))           Default: NZ*0.0
       ! FEXTR2 = 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0. !
       (Used only if IEXTRP = 3 or -3)


    BARRIER INFORMATION

       Number of barriers to interpolation
       of the wind fields (NBAR)              Default: 0      ! NBAR =  0  !

       Level (1 to NZ) up to which barriers
       apply (KBAR)                           Default: NZ     ! KBAR =  10  !
```

```
      THE FOLLOWING 4 VARIABLES ARE INCLUDED
      ONLY IF NBAR > 0
      NOTE: NBAR values must be entered     No defaults
            for each variable               Units: km

         X coordinate of BEGINNING
         of each barrier (XBBAR(NBAR))      ! XBBAR = 0. !
         Y coordinate of BEGINNING
         of each barrier (YBBAR(NBAR))      ! YBBAR = 0. !

         X coordinate of ENDING
         of each barrier (XEBAR(NBAR))      ! XEBAR = 0. !
         Y coordinate of ENDING
         of each barrier (YEBAR(NBAR))      ! YEBAR = 0. !


   DIAGNOSTIC MODULE DATA INPUT OPTIONS

      Surface temperature (IDIOPT1)         Default: 0       ! IDIOPT1 =  0
!
         0 = Compute internally from
             hourly surface observations
         1 = Read preprocessed values from
             a data file (DIAG.DAT)

         Surface met. station to use for
         the surface temperature (ISURFT)   No default      ! ISURFT =  12  !
         (Must be a value from 1 to NSSTA)
         (Used only if IDIOPT1 = 0)
         --------------------------

      Domain-averaged temperature lapse
      rate (IDIOPT2)                        Default: 0      ! IDIOPT2 =  0  !
         0 = Compute internally from
             twice-daily upper air observations
         1 = Read hourly preprocessed values
             from a data file (DIAG.DAT)

         Upper air station to use for
         the domain-scale lapse rate (IUPT) No default      ! IUPT   =  1  !
         (Must be a value from 1 to NUSTA)
         (Used only if IDIOPT2 = 0)
         --------------------------

         Depth through which the domain-scale
         lapse rate is computed (ZUPT)      Default: 200.  ! ZUPT = 200. !
         (Used only if IDIOPT2 = 0)         Units: meters
         --------------------------

      Domain-averaged wind components
      (IDIOPT3)                             Default: 0      ! IDIOPT3 =  0  !
         0 = Compute internally from
             twice-daily upper air observations
         1 = Read hourly preprocessed values
             a data file (DIAG.DAT)

         Upper air station to use for
         the domain-scale winds (IUPWND)    Default: -1     ! IUPWND = -1  !
         (Must be a value from -1 to NUSTA)
         (Used only if IDIOPT3 = 0)
         --------------------------
```

```
          Bottom and top of layer through
          which the domain-scale winds
          are computed
          (ZUPWND(1), ZUPWND(2))        Defaults: 1., 1000. ! ZUPWND= 1.,
1000. !
          (Used only if IDIOPT3 = 0)    Units: meters
          --------------------------

       Observed surface wind components
       for wind field module (IDIOPT4)  Default: 0     ! IDIOPT4 =  0  !
          0 = Read WS, WD from a surface
              data file (SURF.DAT)
          1 = Read hourly preprocessed U, V from
              a data file (DIAG.DAT)

       Observed upper air wind components
       for wind field module (IDIOPT5)  Default: 0     ! IDIOPT5 =  0  !
          0 = Read WS, WD from an upper
              air data file (UP1.DAT, UP2.DAT, etc.)
          1 = Read hourly preprocessed U, V from
              a data file (DIAG.DAT)

       LAKE BREEZE INFORMATION

          Use Lake Breeze Module  (LLBREZE)
                                         Default: F      ! LLBREZE = F!

           Number of lake breeze regions (NBOX)            ! NBOX =  1  !

        X Grid line 1 defining the region of interest
                                                        ! XG1 = 0. !
        X Grid line 2 defining the region of interest
                                                        ! XG2 = 0. !
        Y Grid line 1 defining the region of interest
                                                        ! YG1 = 0. !
        Y Grid line 2 defining the region of interest
                                                        ! YG2 = 0. !

         X Point defining the coastline (Straight line)
                   (XBCST)  (KM)   Default: none    ! XBCST = 0. !

         Y Point defining the coastline (Straight line)
                   (YBCST)  (KM)   Default: none    ! YBCST = 0. !

         X Point defining the coastline (Straight line)
                   (XECST)  (KM)   Default: none    ! XECST = 0. !

         Y Point defining the coastline (Straight line)
                   (YECST)  (KM)   Default: none    ! YECST = 0. !


       Number of stations in the region     Default: none ! NLB =  0 !
       (Surface stations + upper air stations)

       Station ID's  in the region   (METBXID(NLB))
       (Surface stations first, then upper air stations)
         ! METBXID =  0 !

!END!
```

```
------------------------------------------------------------------------------
--

INPUT GROUP: 6 -- Mixing Height, Temperature and Precipitation Parameters
--------------

    EMPIRICAL MIXING HEIGHT CONSTANTS

       Neutral, mechanical equation
       (CONSTB)                             Default: 1.41   ! CONSTB = 1.41
!
       Convective mixing ht. equation
       (CONSTE)                             Default: 0.15   ! CONSTE = 0.15
!
       Stable mixing ht. equation
       (CONSTN)                             Default: 2400.  ! CONSTN =
2400.!
       Overwater mixing ht. equation
       (CONSTW)                             Default: 0.16   ! CONSTW = 0.16
!
       Absolute value of Coriolis
       parameter (FCORIOL)                  Default: 1.E-4  ! FCORIOL =
1.0E-04!
                                            Units: (1/s)

    SPATIAL AVERAGING OF MIXING HEIGHTS

       Conduct spatial averaging
       (IAVEZI)  (0=no, 1=yes)              Default: 1      ! IAVEZI =  1  !

       Max. search radius in averaging
       process (MNMDAV)                     Default: 1      ! MNMDAV =  1  !
                                            Units: Grid
                                                   cells
       Half-angle of upwind looking cone
       for averaging (HAFANG)               Default: 30.    ! HAFANG = 30. !
                                            Units: deg.
       Layer of winds used in upwind
       averaging (ILEVZI)                   Default: 1      ! ILEVZI =  1  !
       (must be between 1 and NZ)


    CONVECTIVE MIXING HEIGHT OPTIONS:
       Method to compute the convective
       mixing height(IMIHXH)                Default: 1      ! IMIXH =  -1  !
           1: Maul-Carson for land and water cells
          -1: Maul-Carson for land cells only -
              OCD mixing height overwater
           2: Batchvarova and Gryning for land and water cells
          -2: Batchvarova and Gryning for land cells only
              OCD mixing height overwater

       Threshold buoyancy flux required to
       sustain convective mixing height growth
       overland (THRESHL)                   Default: 0.05   ! THRESHL = 0.0
!
       (expressed as a heat flux            units: W/m3
        per meter of boundary layer)


       Threshold buoyancy flux required to
       sustain convective mixing height growth
```

```
       overwater (THRESHW)                     Default: 0.05   ! THRESHW = 0.05
!
       (expressed as a heat flux               units: W/m3
        per meter of boundary layer)


       Option for overwater lapse rates used
       in convective mixing height growth
       (ITWPROG)                               Default: 0      ! ITWPROG =  0
!
       0 : use SEA.DAT lapse rates and deltaT (or assume neutral
           conditions if missing)
       1 : use prognostic lapse rates (only if IPROG>2)
           and SEA.DAT deltaT (or neutral if missing)
       2 : use prognostic lapse rates and prognostic delta T
           (only if iprog>12 and 3D.DAT version# 2.0 or higher)

       Land Use category ocean in 3D.DAT datasets
       (ILUOC3D)                               Default: 16     ! ILUOC3D =  16
!
       Note: if 3D.DAT from MM5 version 3.0, iluoc3d = 16
             if MM4.DAT,           typically iluoc3d = 7


    OTHER MIXING HEIGHT VARIABLES

       Minimum potential temperature lapse
       rate in the stable layer above the
       current convective mixing ht.           Default: 0.001  ! DPTMIN = 0.001
!
       (DPTMIN)                                Units: deg. K/m
       Depth of layer above current conv.
       mixing height through which lapse       Default: 200.   ! DZZI = 200. !
       rate is computed (DZZI)                 Units: meters

       Minimum overland mixing height          Default:  50.   ! ZIMIN = 50. !
       (ZIMIN)                                 Units: meters
       Maximum overland mixing height          Default: 3000.  ! ZIMAX = 3000.
!
       (ZIMAX)                                 Units: meters
       Minimum overwater mixing height         Default:   50.  ! ZIMINW = 50. !
       (ZIMINW) -- (Not used if observed       Units: meters
       overwater mixing hts. are used)
       Maximum overwater mixing height         Default: 3000.  ! ZIMAXW = 3000.
!
       (ZIMAXW) -- (Not used if observed       Units: meters
       overwater mixing hts. are used)


    OVERWATER SURFACE FLUXES METHOD and PARAMETERS
          (ICOARE)                             Default: 10      ! ICOARE =  0
!
           0: original deltaT method (OCD)
          10: COARE with no wave parameterization (jwave=0, Charnock)
          11: COARE with wave option jwave=1 (Oost et al.)
              and default wave properties
         -11: COARE with wave option jwave=1 (Oost et al.)
              and observed wave properties (must be in SEA.DAT files)
          12: COARE with wave option 2 (Taylor and Yelland)
               and default wave properties
         -12: COARE with wave option 2 (Taylor and Yelland)
              and observed wave properties (must be in SEA.DAT files)
```

```
          Coastal/Shallow water length scale (DSHELF)
          (for modified z0 in shallow water)
          ( COARE fluxes only)
                                        Default : 0.        ! DSHELF = 0. !
                                        units: km

           COARE warm layer computation (IWARM)             ! IWARM =  0
!
           1: on - 0: off (must be off if SST measured with
           IR radiometer)               Default: 0

           COARE cool skin layer computation (ICOOL)        ! ICOOL =  0
!
           1: on - 0: off (must be off if SST measured with
           IR radiometer)               Default: 0


    TEMPERATURE PARAMETERS

       3D temperature from observations or
       from prognostic data? (ITPROG)      Default:0        ! ITPROG =  0
!

          0 = Use Surface and upper air stations
              (only if NOOBS = 0)
          1 = Use Surface stations (no upper air observations)
              Use MM5/3D for upper air data
              (only if NOOBS = 0,1)
          2 = No surface or upper air observations
              Use MM5/3D for surface and upper air data
              (only if NOOBS = 0,1,2)

       Interpolation type
       (1 = 1/R ; 2 = 1/R**2)              Default:1         ! IRAD =  1  !

       Radius of influence for temperature
       interpolation (TRADKM)              Default: 500.     ! TRADKM =
500. !
                                           Units: km

       Maximum Number of stations to include
       in temperature interpolation (NUMTS)  Default: 5      ! NUMTS = 5  !

       Conduct spatial averaging of temp-
       eratures (IAVET)  (0=no, 1=yes)     Default: 1        ! IAVET =  1
!
       (will use mixing ht MNMDAV,HAFANG
        so make sure they are correct)

       Default temperature gradient        Default: -.0098   ! TGDEFB = -
0.0098 !
       below the mixing height over        Units: K/m
       water (TGDEFB)

       Default temperature gradient        Default: -.0045   ! TGDEFA = -
0.0045 !
       above the mixing height over        Units: K/m
       water (TGDEFA)

       Beginning (JWAT1) and ending (JWAT2)
```

```
      land use categories for temperature                    ! JWAT1 =  55
!
      interpolation over water -- Make                       ! JWAT2 =  55
!
      bigger than largest land use to disable

   PRECIP INTERPOLATION PARAMETERS

      Method of interpolation (NFLAGP)      Default: 2       ! NFLAGP =  2
!
       (1=1/R,2=1/R**2,3=EXP/R**2)
      Radius of Influence  (SIGMAP)         Default: 100.0   ! SIGMAP = 100.
!
       (0.0 => use half dist. btwn          Units: km
        nearest stns w & w/out
        precip when NFLAGP = 3)
      Minimum Precip. Rate Cutoff (CUTP)    Default: 0.01    ! CUTP = 0.01 !
       (values < CUTP = 0.0 mm/hr)          Units: mm/hr
!END!


-----------------------------------------------------------------------------
--

INPUT GROUP: 7 -- Surface meteorological station parameters
--------------

     SURFACE STATION VARIABLES
     (One record per station --  5  records in all)


             1     2
         Name   ID            X coord.   Y coord.   Time   Anem.
                               (km)       (km)      zone   Ht.(m)
      ----------------------------------------------------------
! SS1  ='C629'    629       256.25     -1332.44    6    10  !
! SS2  ='C630'    630       254.96     -1331.71    6    10  !
! SS3  ='C631'    631       245.99     -1329.69    6    10  !
! SS4  ='C632'    632       245.38     -1331.70    6    10  !
! SS5  ='C633'    633       244.05     -1331.51    6    10  !
! SS6  ='C634'    634       254.91     -1334.58    6    10  !
! SS7  ='C635'    6351      251.72     -1333.24    6    10  !
! SS8  ='6352'    6352      251.72     -1333.27    6    10  !
! SS9  ='KBKS'    720269    188.65     -1403.81    6    10  !
! SS10 ='KRBO'    720316    230.22     -1337.12    6    10  !
! SS11 ='KRAS'    722008    289.68     -1331.35    6    10  !
! SS12 ='KCRP'    722510    247.14     -1337.73    6    10  !
! SS13 ='KNGP'    722515    270.27     -1345.19    6    10  !
! SS14 ='KNQI'    722516    217.78     -1369.29    6    10  !
! SS15 ='KALI'    722517    196.17     -1342.75    6    10  !
! SS16 ='KRKP'    722524    291.85     -1301.40    6    10  !
! SS17 ='PTAT'    994110    292.95     -1331.23    6    10  !
! SS18 ='MQTT'    997366    277.29     -1358.11    6    10  !

-------------------
     1
       Four character string for station name
       (MUST START IN COLUMN 9)

     2
       Six digit integer for station ID
```

```
!END!


--------------------------------------------------------------------------------
--

INPUT GROUP: 8 -- Upper air meteorological station parameters
--------------

     UPPER AIR STATION VARIABLES
     (One record per station --  3  records in all)

             1     2
         Name    ID      X coord.   Y coord.  Time zone
                           (km)       (km)
        -----------------------------------------------
! US1  ='CRP '   12924    248.45    -1338.03   6   !
-------------------
      1
        Four character string for station name
        (MUST START IN COLUMN 9)

      2
        Five digit integer for station ID

!END!


--------------------------------------------------------------------------------
--

INPUT GROUP: 9 -- Precipitation station parameters
--------------

     PRECIPITATION STATION VARIABLES
     (One record per station --  16  records in all)
     (NOT INCLUDED IF NPSTA = 0)

            1          2
         Name   Station    X coord.  Y coord.
                  Code       (km)      (km)
         ------------------------------------

! PS1  ='ALIC'   410145    196.39    -1342.73  !
! PS2  ='BEEV'   410639    225.76    -1261.58  !
! PS3  ='CORP'   412015    247.22    -1337.60  !
! PS4  ='MATH'   415661    210.64    -1309.11  !
! PS5  ='SARI'   418081    230.81    -1400.80  !

-------------------
      1
        Four character string for station name
        (MUST START IN COLUMN 9)

      2
        Six digit station code composed of state
        code (first 2 digits) and station ID (last
        4 digits)

!END!
```

APPENDIX B
CALPUFF Run 4 Script

```
#!/bin/csh

# CALPUFF using CALMET run 13

set RUN = run4

# 12/31/08.
# calmet uses the camx vertical layer structure (run13) and finer coastline
data
# benzene emissions are from 2005 STARS (not 2002 NEI)
# output includes gridded + discrete receptors
# Run 4: add micrometeorological variables to compute dispersion,

set METRUN = run13
set MET = ../../calmet/output/$METRUN

mkdir -p $RUN ../output/$RUN

set DAYBEG = (061001 061003 061101)
set DAYEND = (061002 061031 061130)
foreach i (2 3 )

set DATE = $DAYBEG[$i]
while ($DATE <= $DAYEND[$i])

set DATE = `echo $DATE | awk '{printf("%6.6d",$1)}'`
echo 'processing for ' $DATE

@ YY = ($DATE / 10000) + 2000
@ MM = (($DATE % 10000) / 100)
@ DD = $DATE % 100

if ($DATE == 061001) then
  set RESTART = 2
else
  set RESTART = 3
  if ($DD > 1) then
    @ YESTERDAY = $DATE - 1
  else
    @ im1 = $i - 1
    set YESTERDAY = $DAYEND[$im1]
  endif
  set YESTERDAY = `echo $YESTERDAY | awk '{printf("%6.6d",$1)}'`
endif

echo $RESTART

rm calpuff.inp

cat << IEOF > calpuff.inp
Corpus Christi CALPUFF.  1km resolution for Benzene
$DATE
72 x 72
---------------- Run title (3 lines) ---------------------------------------
--

                    CALPUFF MODEL CONTROL FILE
                    --------------------------

----------------------------------------------------------------------------
--
```

```
INPUT GROUP: 0 -- Input and Output File Names

--------------
Default Name  Type           File Name
------------  ----           ---------
CALMET.DAT    input    ! METDAT = $MET/calmet.cc.$METRUN.$DATE.dat  !
    or
ISCMET.DAT    input    * ISCDAT =             *
    or
PLMMET.DAT    input    * PLMDAT =             *
    or
PROFILE.DAT   input    * PRFDAT =             *
SURFACE.DAT   input    * SFCDAT =             *
IEOF

if ($RESTART == 3) then
cat << IEOF >> calpuff.inp
RESTARTB.DAT  input    !
RSTARTB=../output/$RUN/restart.calpuff.$RUN.$YESTERDAY.bin !
endif

cat << IEOF >> calpuff.inp
----------------------------------------------------------------------------
---
CALPUFF.LST   output   ! PUFLST = ../output/$RUN/msg.calpuff.$RUN.$DATE.lst !
CONC.DAT      output   ! CONDAT =../output/$RUN/conc.calpuff.$RUN.$DATE.bin !
DFLX.DAT      output   ! DFDAT  =../output/$RUN/ddep.calpuff.$RUN.$DATE.bin
!
WFLX.DAT      output   * WFDAT  =  *

VISB.DAT      output   * VISDAT =             *
TK2D.DAT      output   * T2DDAT =             *
RHO2D.DAT     output   * RHODAT =             *
RESTARTE.DAT  output   ! RSTARTE=
../output/$RUN/restart.calpuff.$RUN.$DATE.bin !
----------------------------------------------------------------------------
---
Emission Files
--------------
PTEMARB.DAT   input    * PTDAT  =             *
VOLEMARB.DAT  input    * VOLDAT =             *
BAEMARB.DAT   input    * ARDAT  =             *
LNEMARB.DAT   input    * LNDAT  =             *
----------------------------------------------------------------------------
---
Other Files
-----------
OZONE.DAT     input    * OZDAT  =OZONE.DAT    *
VD.DAT        input    * VDDAT  =             *
CHEM.DAT      input    * CHEMDAT=             *
H2O2.DAT      input    * H2O2DAT=             *
HILL.DAT      input    * HILDAT=             *
HILLRCT.DAT   input    * RCTDAT=             *
COASTLN.DAT   input    ! CSTDAT=
../../calmet/preproc/geo/terrel/output/coast.cc.bln !
FLUXBDY.DAT   input    * BDYDAT=             *
BCON.DAT      input    * BCNDAT=             *
DEBUG.DAT     output   * DEBUG =             *
MASSFLX.DAT   output   * FLXDAT=             *
MASSBAL.DAT   output   * BALDAT=             *
FOG.DAT       output   * FOGDAT=             *
```

```
--------------------------------------------------------------------------------
---
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 70 characters in length


Provision for multiple input files
----------------------------------

     Number of CALMET.DAT files for run (NMETDAT)
                                Default: 1       ! NMETDAT =   1   !

     Number of PTEMARB.DAT files for run (NPTDAT)
                                Default: 0       ! NPTDAT =  0  !

     Number of BAEMARB.DAT files for run (NARDAT)
                                Default: 0       ! NARDAT =  0  !

     Number of VOLEMARB.DAT files for run (NVOLDAT)
                                Default: 0       ! NVOLDAT =  0  !

!END!

-------------
Subgroup (0a)
-------------

  The following CALMET.DAT filenames are processed in sequence if NMETDAT>1

Default Name  Type          File Name
------------  ----          ---------
 none         input    * METDAT=     *   *END*


--------------------------------------------------------------------------------
---

INPUT GROUP: 1 -- General run control parameters
--------------

    Option to run all periods found
    in the met. file     (METRUN)   Default: 0       ! METRUN =   0  !

         METRUN = 0 - Run period explicitly defined below
         METRUN = 1 - Run all periods in met. file

     Starting date:   Year (IBYR) -- No default       ! IBYR =  $YY  !
     (used only if   Month (IBMO) -- No default       ! IBMO =  $MM  !
      METRUN = 0)      Day (IBDY) -- No default       ! IBDY =  $DD  !
                      Hour (IBHR) -- No default       ! IBHR =  1  !

     Note: IBHR is the time at the END of the first hour of the simulation
           (IBHR=1, the first hour of a day, runs from 00:00 to 01:00)

     Base time zone        (XBTZ) -- No default       ! XBTZ = 6  !
     The zone is the number of hours that must be
     ADDED to the time to obtain UTC (or GMT)
     Examples: PST = 8., MST = 7.
               CST = 6., EST = 5.
```

```
     Length of run (hours) (IRLG) -- No default       ! IRLG =  24  !

     Number of chemical species (NSPEC)
                                Default: 5       ! NSPEC =  1   !

     Number of chemical species
     to be emitted  (NSE)           Default: 3       ! NSE =  1   !

     Flag to stop run after
     SETUP phase (ITEST)            Default: 2       ! ITEST =  2   !
     (Used to allow checking
     of the model inputs, files, etc.)
           ITEST = 1 - STOPS program after SETUP phase
           ITEST = 2 - Continues with execution of program
                       after SETUP

     Restart Configuration:

        Control flag (MRESTART)     Default: 0       ! MRESTART = $RESTART
!

           0 = Do not read or write a restart file
           1 = Read a restart file at the beginning of
               the run
           2 = Write a restart file during run
           3 = Read a restart file at beginning of run
               and write a restart file during run

        Number of periods in Restart
        output cycle (NRESPD)       Default: 0       ! NRESPD =  0   !

           0 = File written only at last period
          >0 = File updated every NRESPD periods

     Meteorological Data Format (METFM)
                                Default: 1       ! METFM =  1   !

           METFM = 1 - CALMET binary file (CALMET.MET)
           METFM = 2 - ISC ASCII file (ISCMET.MET)
           METFM = 3 - AUSPLUME ASCII file (PLMMET.MET)
           METFM = 4 - CTDM plus tower file (PROFILE.DAT) and
                       surface parameters file (SURFACE.DAT)
           METFM = 5 - AERMET tower file (PROFILE.DAT) and
                       surface parameters file (SURFACE.DAT)

     Meteorological Profile Data Format (MPRFFM)
            (used only for METFM = 1, 2, 3)
                                Default: 1       ! MPRFFM =  1   !

           MPRFFM = 1 - CTDM plus tower file (PROFILE.DAT)
           MPRFFM = 2 - AERMET tower file (PROFILE.DAT)

     PG sigma-y is adjusted by the factor (AVET/PGTIME)**0.2
     Averaging Time (minutes) (AVET)
                                Default: 60.0    ! AVET = 60. !
     PG Averaging Time (minutes) (PGTIME)
                                Default: 60.0    ! PGTIME = 60. !


!END!
```

```
-------------------------------------------------------------------------------
--

INPUT GROUP: 2 -- Technical options
--------------


     Vertical distribution used in the
     near field (MGAUSS)                   Default: 1     ! MGAUSS =  1   !
        0 = uniform
        1 = Gaussian

     Terrain adjustment method
     (MCTADJ)                              Default: 3     ! MCTADJ =  3   !
        0 = no adjustment
        1 = ISC-type of terrain adjustment
        2 = simple, CALPUFF-type of terrain
            adjustment
        3 = partial plume path adjustment

     Subgrid-scale complex terrain
     flag (MCTSG)                          Default: 0     ! MCTSG =  0   !
        0 = not modeled
        1 = modeled

     Near-field puffs modeled as
     elongated slugs? (MSLUG)              Default: 0     ! MSLUG =  0   !
        0 = no
        1 = yes (slug model used)

     Transitional plume rise modeled?
     (MTRANS)                              Default: 1     ! MTRANS =  1   !
        0 = no  (i.e., final rise only)
        1 = yes (i.e., transitional rise computed)

     Stack tip downwash? (MTIP)            Default: 1     ! MTIP =  1  !
        0 = no  (i.e., no stack tip downwash)
        1 = yes (i.e., use stack tip downwash)

     Method used to simulate building
     downwash? (MBDW)                      Default: 1     ! MBDW =   1  !
        1 = ISC method
        2 = PRIME method

     Vertical wind shear modeled above
     stack top? (MSHEAR)                   Default: 0     ! MSHEAR =  0  !
        0 = no  (i.e., vertical wind shear not modeled)
        1 = yes (i.e., vertical wind shear modeled)

     Puff splitting allowed? (MSPLIT)      Default: 0     ! MSPLIT =  0  !
        0 = no (i.e., puffs not split)
        1 = yes (i.e., puffs are split)

     Chemical mechanism flag (MCHEM)       Default: 1     ! MCHEM =  0   !
        0 = chemical transformation not
            modeled
        1 = transformation rates computed
            internally (MESOPUFF II scheme)
        2 = user-specified transformation
            rates used
        3 = transformation rates computed
```

```
       internally (RIVAD/ARM3 scheme)
   4 = secondary organic aerosol formation
       computed (MESOPUFF II scheme for OH)

Aqueous phase transformation flag (MAQCHEM)
(Used only if MCHEM = 1, or 3)        Default: 0     ! MAQCHEM =  0   !
   0 = aqueous phase transformation
       not modeled
   1 = transformation rates adjusted
       for aqueous phase reactions

Wet removal modeled ? (MWET)          Default: 1     ! MWET =  1   !
   0 = no
   1 = yes

Dry deposition modeled ? (MDRY)       Default: 1     ! MDRY =  1   !
   0 = no
   1 = yes
   (dry deposition method specified
    for each species in Input Group 3)


Gravitational settling (plume tilt)
modeled ? (MTILT)                     Default: 0     ! MTILT =  0   !
   0 = no
   1 = yes
   (puff center falls at the gravitational
    settling velocity for 1 particle species)

Restrictions:
    - MDRY  = 1
    - NSPEC = 1  (must be particle species as well)
    - sg    = 0  GEOMETRIC STANDARD DEVIATION in Group 8 is
                 set to zero for a single particle diameter

Method used to compute dispersion
coefficients (MDISP)                  Default: 3     ! MDISP =  2   !

   1 = dispersion coefficients computed from measured values
       of turbulence, sigma v, sigma w
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.
   5 = CTDM sigmas used for stable and neutral conditions.
       For unstable conditions, sigmas are computed as in
       MDISP = 3, described above.  MDISP = 5 assumes that
       measured values are read

Sigma-v/sigma-theta, sigma-w measurements used? (MTURBVW)
(Used only if MDISP = 1 or 5)         Default: 3     ! MTURBVW =  3  !
   1 = use sigma-v or sigma-theta measurements
       from PROFILE.DAT to compute sigma-y
       (valid for METFM = 1, 2, 3, 4, 5)
   2 = use sigma-w measurements
       from PROFILE.DAT to compute sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   3 = use both sigma-(v/theta) and sigma-w
```

```
       from PROFILE.DAT to compute sigma-y and sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   4 = use sigma-theta measurements
       from PLMMET.DAT to compute sigma-y
       (valid only if METFM = 3)

Back-up method used to compute dispersion
when measured turbulence data are
missing (MDISP2)                     Default: 3     ! MDISP2 =  3  !
(used only if MDISP = 1 or 5)
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.

[DIAGNOSTIC FEATURE]
Method used for Lagrangian timescale for Sigma-y
(used only if MDISP=1,2 or MDISP2=1,2)
(MTAULY)                             Default: 0     ! MTAULY =  0  !
   0 = Draxler default 617.284 (s)
   1 = Computed as Lag. Length / (.75 q) -- after SCIPUFF
  10 < Direct user input (s)             -- e.g., 306.9


[DIAGNOSTIC FEATURE]
Method used for Advective-Decay timescale for Turbulence
(used only if MDISP=2 or MDISP2=2)
(MTAUADV)                            Default: 0     ! MTAUADV =  0  !
   0 = No turbulence advection
   1 = Computed (OPTION NOT IMPLEMENTED)
  10 < Direct user input (s)   -- e.g., 300


Method used to compute turbulence sigma-v &
sigma-w using micrometeorological variables
(Used only if MDISP = 2 or MDISP2 = 2)
(MCTURB)                             Default: 1     ! MCTURB =  1  !
   1 = Standard CALPUFF subroutines
   2 = AERMOD subroutines

PG sigma-y,z adj. for roughness?     Default: 0     ! MROUGH =  0  !
(MROUGH)
   0 = no
   1 = yes

Partial plume penetration of         Default: 1     ! MPARTL =  1  !
elevated inversion?
(MPARTL)
   0 = no
   1 = yes

Strength of temperature inversion    Default: 0     ! MTINV =  0  !
provided in PROFILE.DAT extended records?
(MTINV)
   0 = no (computed from measured/default gradients)
   1 = yes

PDF used for dispersion under convective conditions?
```

```
                                       Default: 0     ! MPDF =  0  !
(MPDF)
   0 = no
   1 = yes

Sub-Grid TIBL module used for shore line?
                                       Default: 0     ! MSGTIBL = 0  !
(MSGTIBL)
   0 = no
   1 = yes

Boundary conditions (concentration) modeled?
                                       Default: 0     ! MBCON = 0  !
(MBCON)
   0 = no
   1 = yes, using formatted BCON.DAT file
   2 = yes, using unformatted CONC.DAT file

Note:  MBCON > 0 requires that the last species modeled
       be 'BCON'.  Mass is placed in species BCON when
       generating boundary condition puffs so that clean
       air entering the modeling domain can be simulated
       in the same way as polluted air.  Specify zero
       emission of species BCON for all regular sources.

Individual source contributions saved?
                                       Default: 0     ! MSOURCE = 0  !
(MSOURCE)
   0 = no
   1 = yes


Analyses of fogging and icing impacts due to emissions from
arrays of mechanically-forced cooling towers can be performed
using CALPUFF in conjunction with a cooling tower emissions
processor (CTEMISS) and its associated postprocessors.  Hourly
emissions of water vapor and temperature from each cooling tower
cell are computed for the current cell configuration and ambient
conditions by CTEMISS. CALPUFF models the dispersion of these
emissions and provides cloud information in a specialized format
for further analysis. Output to FOG.DAT is provided in either
'plume mode' or 'receptor mode' format.

Configure for FOG Model output?
                                       Default: 0     ! MFOG =  0   !
(MFOG)
   0 = no
   1 = yes  - report results in PLUME Mode format
   2 = yes  - report results in RECEPTOR Mode format


Test options specified to see if
they conform to regulatory
values? (MREG)                         Default: 1     ! MREG =  0   !

   0 = NO checks are made
   1 = Technical options must conform to USEPA
       Long Range Transport (LRT) guidance
                  METFM    1 or 2
                  AVET     60. (min)
                  PGTIME   60. (min)
                  MGAUSS   1
```

```
                      MCTADJ   3
                      MTRANS   1
                      MTIP     1
                      MCHEM    1 or 3 (if modeling SOx, NOx)
                      MWET     1
                      MDRY     1
                      MDISP    2 or 3
                      MPDF     0 if MDISP=3
                               1 if MDISP=2
                      MROUGH   0
                      MPARTL   1
                      SYTDEP   550. (m)
                      MHFTSZ   0
                      SVMIN    0.5 (m/s)


!END!


--------------------------------------------------------------------------------
--

INPUT GROUP: 3a, 3b -- Species list
-------------------

------------
Subgroup (3a)
------------

  The following species are modeled:

! CSPEC =          BENZ !         !END!

                                                       Dry
OUTPUT GROUP
    SPECIES          MODELED          EMITTED       DEPOSITED
NUMBER
     NAME         (0=NO, 1=YES)    (0=NO, 1=YES)    (0=NO,
(0=NONE,
   (Limit: 12                                        1=COMPUTED-GAS
1=1st CGRUP,
    Characters                                       2=COMPUTED-PARTICLE
2=2nd CGRUP,
    in length)                                       3=USER-SPECIFIED)     3=
etc.)

!         BENZ  =         1,               1,          1,                  0
!
          SO2  =         1,               1,          1,                  0
          SO4  =         1,               0,          2,                  0
           NO  =         1,               1,          1,                  0
          NO2  =         1,               1,          1,                  0
         HNO3  =         1,               0,          1,                  0
          NO3  =         1,               0,          2,                  0
         PM10  =         1,               1,          2,                  0

!END!

  Note:  The last species in (3a) must be 'BCON' when using the
         boundary condition option (MBCON > 0).  Species BCON should
         typically be modeled as inert (no chem transformation or
         removal).
```

```
-------------
Subgroup (3b)
-------------
  The following names are used for Species-Groups in which results
  for certain species are combined (added) prior to output.  The
  CGRUP name will be used as the species name in output files.
  Use this feature to model specific particle-size distributions
  by treating each size-range as a separate species.
  Order must be consistent with 3(a) above.



-----------------------------------------------------------------------------
--


INPUT GROUP: 4 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                     Default: UTM    ! PMAP = LCC  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                    Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                   Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                   No Default      ! IUTMZN =  0   !

     Hemisphere for UTM projection?
     (Used only if PMAP=UTM)
     (UTMHEM)                   Default: N      ! UTMHEM = N  !
         N   :  Northern hemisphere projection
         S   :  Southern hemisphere projection

     Latitude and Longitude (decimal degrees) of projection origin
     (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
     (RLAT0)                    No Default      ! RLAT0 = 40.0N  !
     (RLON0)                    No Default      ! RLON0 = 100.0W  !

         TTM :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         LCC :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         PS  :  RLON0 identifies central (grid N/S) meridian of projection
                RLAT0 selected for convenience
         EM  :  RLON0 identifies central meridian of projection
                RLAT0 is REPLACED by 0.0N (Equator)
```

```
         LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
                RLAT0 identifies latitude of tangent-point of mapping plane

     Matching parallel(s) of latitude (decimal degrees) for projection
     (Used only if PMAP= LCC or PS)
     (XLAT1)                    No Default      ! XLAT1 = 30.0N  !
     (XLAT2)                    No Default      ! XLAT2 = 60.0N  !

         LCC :  Projection cone slices through Earth's surface at XLAT1 and
XLAT2
         PS  :  Projection plane slices through Earth at XLAT1
                (XLAT2 is not used)

     ----------
     Note:  Latitudes and longitudes should be positive, and include a
            letter N,S,E, or W indicating north or south latitude, and
            east or west longitude.  For example,
            35.9  N Latitude  =  35.9N
            118.7 E Longitude = 118.7E


     Datum-region
     ------------

     The Datum-Region for the coordinates is identified by a character
     string.  Many mapping products currently available use the model of the
     Earth known as the World Geodetic System 1984 (WGS-84).  Other local
     models may be in use, and their selection in CALMET will make its output
     consistent with local mapping products.  The list of Datum-Regions with
     official transformation parameters is provided by the National Imagery
and
     Mapping Agency (NIMA).

     NIMA Datum - Regions(Examples)
     ------------------------------------------------------------------------------
------
     WGS-84    WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
     NAS-C     NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS
(NAD27)
     NAR-C     NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
     NWS-84    NWS 6370KM Radius, Sphere
     ESR-S     ESRI REFERENCE 6371KM Radius, Sphere

     Datum-region for output coordinates
     (DATUM)                    Default: WGS-84    ! DATUM = NWS-84  !


METEOROLOGICAL Grid:

     Rectangular grid defined for projection PMAP,
     with X the Easting and Y the Northing coordinate

            No. X grid cells (NX)      No default     ! NX =  72   !
            No. Y grid cells (NY)      No default     ! NY =  72   !
        No. vertical layers (NZ)       No default     ! NZ =  14   !

           Grid spacing (DGRIDKM)      No default     ! DGRIDKM = 1.0 !
                                       Units: km

                Cell face heights
                    (ZFACE(nz+1))      No defaults
                                       Units: m
```

```
        ! ZFACE = 0.,18.0, 33.9, 85.0, 170.6, 256.9, 344.0, 431.8, 520.3,
                  609.7, 790.6, 1068.2, 1353.4, 2103.3, 3026.3  !

            Reference Coordinates
           of SOUTHWEST corner of
                 grid cell(1, 1):

            X coordinate (XORIGKM)     No default     ! XORIGKM = 216.0 !
            Y coordinate (YORIGKM)     No default     ! YORIGKM = -1368.0 !
                                      Units: km


COMPUTATIONAL Grid:

     The computational grid is identical to or a subset of the MET. grid.
     The lower left (LL) corner of the computational grid is at grid point
     (IBCOMP, JBCOMP) of the MET. grid.  The upper right (UR) corner of the
     computational grid is at grid point (IECOMP, JECOMP) of the MET. grid.
     The grid spacing of the computational grid is the same as the MET. grid.

        X index of LL corner (IBCOMP)      No default     ! IBCOMP =  1   !
                  (1 <= IBCOMP <= NX)

        Y index of LL corner (JBCOMP)      No default     ! JBCOMP =  1   !
                  (1 <= JBCOMP <= NY)


        X index of UR corner (IECOMP)      No default     ! IECOMP =  72   !
                  (1 <= IECOMP <= NX)

        Y index of UR corner (JECOMP)      No default     ! JECOMP =  72   !
                  (1 <= JECOMP <= NY)



SAMPLING Grid (GRIDDED RECEPTORS):

     The lower left (LL) corner of the sampling grid is at grid point
     (IBSAMP, JBSAMP) of the MET. grid.  The upper right (UR) corner of the
     sampling grid is at grid point (IESAMP, JESAMP) of the MET. grid.
     The sampling grid must be identical to or a subset of the computational
     grid.  It may be a nested grid inside the computational grid.
     The grid spacing of the sampling grid is DGRIDKM/MESHDN.

        Logical flag indicating if gridded
        receptors are used (LSAMP)         Default: T     ! LSAMP = T !
        (T=yes, F=no)

        X index of LL corner (IBSAMP)      No default     ! IBSAMP =  1   !
         (IBCOMP <= IBSAMP <= IECOMP)

        Y index of LL corner (JBSAMP)      No default     ! JBSAMP =  1   !
         (JBCOMP <= JBSAMP <= JECOMP)


        X index of UR corner (IESAMP)      No default     ! IESAMP =  72  !
         (IBCOMP <= IESAMP <= IECOMP)

        Y index of UR corner (JESAMP)      No default     ! JESAMP =  72   !
         (JBCOMP <= JESAMP <= JECOMP)
```

```
       Nesting factor of the sampling
        grid (MESHDN)                     Default: 1     ! MESHDN =  1  !
        (MESHDN is an integer >= 1)

!END!


----------------------------------------------------------------------------
--


INPUT GROUP: 5 -- Output Options
--------------
                                                *                           *
     FILE                       DEFAULT VALUE             VALUE THIS RUN
     ----                       -------------             --------------

   Concentrations (ICON)              1                   !  ICON =  1   !
   Dry Fluxes (IDRY)                  1                   !  IDRY =  1   !
   Wet Fluxes (IWET)                  1                   !  IWET =  0   !
   2D Temperature (IT2D)              0                   !  IT2D =  0   !
   2D Density (IRHO)                  0                   !  IRHO =  0   !
   Relative Humidity (IVIS)           1                   !  IVIS =  0   !
    (relative humidity file is
     required for visibility
     analysis)
   Use data compression option in output file?
   (LCOMPRS)                           Default: T         ! LCOMPRS = F !

   *
    0 = Do not create file, 1 = create file


    QA PLOT FILE OUTPUT OPTION:

       Create a standard series of output files (e.g.
       locations of sources, receptors, grids ...)
       suitable for plotting?
       (IQAPLOT)                       Default: 1         !  IQAPLOT =  1   !
         0 = no
         1 = yes

    DIAGNOSTIC MASS FLUX OUTPUT OPTIONS:

       Mass flux across specified boundaries
       for selected species reported?
       (IMFLX)                         Default: 0         ! IMFLX =  0  !
         0 = no
         1 = yes (FLUXBDY.DAT and MASSFLX.DAT filenames
                  are specified in Input Group 0)

       Mass balance for each species
       reported?
       (IMBAL)                         Default: 0         ! IMBAL =  0  !
         0 = no
         1 = yes (MASSBAL.DAT filename is
              specified in Input Group 0)


    LINE PRINTER OUTPUT OPTIONS:

       Print concentrations (ICPRT)    Default: 0         ! ICPRT =  0   !
```

```
       Print dry fluxes (IDPRT)        Default: 0         ! IDPRT =  0   !
       Print wet fluxes (IWPRT)        Default: 0         ! IWPRT =  0   !
       (0 = Do not print, 1 = Print)

       Concentration print interval
       (ICFRQ) in timesteps            Default: 1         ! ICFRQ =  1   !
       Dry flux print interval
       (IDFRQ) in timesteps            Default: 1         ! IDFRQ =  1   !
       Wet flux print interval
       (IWFRQ) in timesteps            Default: 1         ! IWFRQ =  1   !

       Units for Line Printer Output
       (IPRTU)                         Default: 1         ! IPRTU =  1   !
                       for            for
                  Concentration    Deposition
           1 =       g/m**3         g/m**2/s
           2 =      mg/m**3        mg/m**2/s
           3 =      ug/m**3        ug/m**2/s
           4 =      ng/m**3        ng/m**2/s
           5 =     Odour Units

       Messages tracking progress of run
       written to the screen ?
       (IMESG)                         Default: 2         ! IMESG =  2   !
         0 = no
         1 = yes (advection step, puff ID)
         2 = yes (YYYYJJJHH, # old puffs, # emitted puffs)


     SPECIES (or GROUP for combined species) LIST FOR OUTPUT OPTIONS

                 ---- CONCENTRATIONS ----   ------ DRY FLUXES ------   ------
WET FLUXES ------   -- MASS FLUX --
   SPECIES
   /GROUP        PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?
PRINTED?  SAVED ON DISK?   SAVED ON DISK?
   -------       -----------------------   -----------------------   ------
------------------   ---------------
!         BENZ =     0,           1,           0,           1,           0,
0,           0   !
          SO2 =     0,           1,           0,           1,           0,
1,           0
          SO4 =     0,           1,           0,           1,           0,
1,           0
           NO =     0,           1,           0,           1,           0,
1,           0
          NO2 =     0,           1,           0,           1,           0,
1,           0
         HNO3 =     0,           1,           0,           1,           0,
1,           0
          NO3 =     0,           1,           0,           1,           0,
1,           0
         PM10 =     0,           1,           0,           1,           0,
1,           0

  Note:  Species BCON (for MBCON > 0) does not need to be saved on disk.


     OPTIONS FOR PRINTING "DEBUG" QUANTITIES (much output)

       Logical for debug output
       (LDEBUG)                                 Default: F     ! LDEBUG = F !
```

```
       First puff to track
       (IPFDEB)                                 Default: 1     ! IPFDEB =  1
!

       Number of puffs to track
       (NPFDEB)                                 Default: 1     ! NPFDEB =  1
!

       Met. period to start output
       (NN1)                                    Default: 1     ! NN1 =  1   !

       Met. period to end output
       (NN2)                                    Default: 10    ! NN2 =  10  !

!END!


-------------------------------------------------------------------------------
--


INPUT GROUP: 6a, 6b, & 6c -- Subgrid scale complex terrain inputs
-------------------------

---------------
Subgroup (6a)
---------------
       Number of terrain features (NHILL)       Default: 0     ! NHILL =  0
!

       Number of special complex terrain
       receptors  (NCTREC)                      Default: 0     ! NCTREC =  0
!

       Terrain and CTSG Receptor data for
       CTSG hills input in CTDM format ?
       (MHILL)                                  No Default     ! MHILL =  2
!
       1 = Hill and Receptor data created
           by CTDM processors & read from
           HILL.DAT and HILLRCT.DAT files
       2 = Hill data created by OPTHILL &
           input below in Subgroup (6b);
           Receptor data in Subgroup (6c)

       Factor to convert horizontal dimensions  Default: 1.0   ! XHILL2M =
1.0 !
       to meters (MHILL=1)

       Factor to convert vertical dimensions    Default: 1.0   ! ZHILL2M =
1.0 !
       to meters (MHILL=1)

       X-origin of CTDM system relative to      No Default     ! XCTDMKM = 0
!
       CALPUFF coordinate system, in Kilometers (MHILL=1)

       Y-origin of CTDM system relative to      No Default     ! YCTDMKM = 0
!
       CALPUFF coordinate system, in Kilometers (MHILL=1)
```

```
! END !

---------------
Subgroup (6b)
---------------

                      1 **
     HILL information


HILL           XC        YC       THETAH  ZGRID  RELIEF    EXPO 1    EXPO 2
SCALE 1    SCALE 2    AMAX1     AMAX2
 NO.          (km)      (km)      (deg.)   (m)     (m)      (m)       (m)
(m)        (m)       (m)       (m)
----          ----      ----      ------  -----  ------    ------    ------
-------    -------    -----     -----

---------------
Subgroup (6c)
---------------

    COMPLEX TERRAIN RECEPTOR INFORMATION

                      XRCT         YRCT        ZRCT          XHH
                      (km)         (km)         (m)
                     ------        -----      ------         ----


-------------------
1
     Description of Complex Terrain Variables:
          XC, YC  = Coordinates of center of hill
          THETAH  = Orientation of major axis of hill (clockwise from
                    North)
          ZGRID   = Height of the  0  of the grid above mean sea
                    level
          RELIEF  = Height of the crest of the hill above the grid elevation
          EXPO 1  = Hill-shape exponent for the major axis
          EXPO 2  = Hill-shape exponent for the major axis
          SCALE 1 = Horizontal length scale along the major axis
          SCALE 2 = Horizontal length scale along the minor axis
          AMAX    = Maximum allowed axis length for the major axis
          BMAX    = Maximum allowed axis length for the major axis

          XRCT, YRCT = Coordinates of the complex terrain receptors
          ZRCT    = Height of the ground (MSL) at the complex terrain
                    Receptor
          XHH     = Hill number associated with each complex terrain receptor
                    (NOTE: MUST BE ENTERED AS A REAL NUMBER)

   **
     NOTE: DATA for each hill and CTSG receptor are treated as a separate
           input subgroup and therefore must end with an input group
terminator.

-----------------------------------------------------------------------------
--


INPUT GROUP: 7 -- Chemical parameters for dry deposition of gases
--------------
```

```
      SPECIES     DIFFUSIVITY      ALPHA STAR      REACTIVITY    MESOPHYLL
RESISTANCE     HENRY'S LAW COEFFICIENT
       NAME        (cm**2/s)
(s/cm)                (dimensionless)
      -------     -----------      ----------      ----------    ------------
--------     -----------------------

!         BENZ =     .0896,           1.0,           0.0,            16382.,
.2287 !
          SO2 =      .1509,        1000.0,           8.0,                .0,
.04
           NO =      .1345,           1.0,           2.0,              25.0,
18.0
          NO2 =      .1656,           1.0,           8.0,               5.0,
3.5
         HNO3 =      .1628,           1.0,          18.0,                .0,
.0000001

!END!


-----------------------------------------------------------------------------
--


INPUT GROUP: 8 -- Size parameters for dry deposition of particles
--------------

     For SINGLE SPECIES, the mean and standard deviation are used to
     compute a deposition velocity for NINT (see group 9) size-ranges,
     and these are then averaged to obtain a mean deposition velocity.

     For GROUPED SPECIES, the size distribution should be explicitly
     specified (by the 'species' in the group), and the standard deviation
     for each should be entered as 0.  The model will then use the
     deposition velocity for the stated mean diameter.

      SPECIES      GEOMETRIC MASS MEAN        GEOMETRIC STANDARD
       NAME             DIAMETER                   DEVIATION
                        (microns)                  (microns)
      -------      -------------------        ------------------
          SO4 =           .48,                     2.0
          NO3 =           .48,                     2.0
         PM10 =           .48,                     2.0

!END!


-----------------------------------------------------------------------------
--


INPUT GROUP: 9 -- Miscellaneous dry deposition parameters
--------------

     Reference cuticle resistance (s/cm)
     (RCUTR)                          Default: 30    !  RCUTR = 30.0 !
     Reference ground resistance  (s/cm)
     (RGR)                            Default: 10    !    RGR = 10.0 !
     Reference pollutant reactivity
     (REACTR)                         Default: 8     ! REACTR = 8.0 !
```

```
     Number of particle-size intervals used to
     evaluate effective particle deposition velocity
     (NINT)                            Default: 9     !   NINT =  9  !

     Vegetation state in unirrigated areas
     (IVEG)                            Default: 1     !   IVEG =  1   !
        IVEG=1 for active and unstressed vegetation
        IVEG=2 for active and stressed vegetation
        IVEG=3 for inactive vegetation

!END!


-----------------------------------------------------------------------------
--


INPUT GROUP: 10 -- Wet Deposition Parameters
---------------


                      Scavenging Coefficient -- Units: (sec)**(-1)

       Pollutant      Liquid Precip.       Frozen Precip.
       ---------      --------------       --------------
         BENZ =
          SO2 =         3.0E-05,              0.0E00
          SO4 =         1.0E-04,             3.0E-05
         HNO3 =         6.0E-05,              0.0E00
          NO3 =         1.0E-04,             3.0E-05
         PM10 =         1.0E-04,             3.0E-05

!END!


-----------------------------------------------------------------------------
--


INPUT GROUP: 11 -- Chemistry Parameters
---------------

     Ozone data input option (MOZ)     Default: 1            ! MOZ =  0   !
     (Used only if MCHEM = 1, 3, or 4)
        0 = use a monthly background ozone value
        1 = read hourly ozone concentrations from
            the OZONE.DAT data file

     Monthly ozone concentrations
     (Used only if MCHEM = 1, 3, or 4 and
      MOZ = 0 or MOZ = 1 and all hourly O3 data missing)
     (BCKO3) in ppb                    Default: 12*80.
     !  BCKO3 = 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00, 40.00,
40.00, 40.00, 40.00, 40.00 !

     Monthly ammonia concentrations
     (Used only if MCHEM = 1, or 3)
     (BCKNH3) in ppb                   Default: 12*10.
     !  BCKNH3 = 12*1.0  !

     Nighttime SO2 loss rate (RNITE1)
     in percent/hour                   Default: 0.2          ! RNITE1 = .2 !
```

```
     Nighttime NOx loss rate (RNITE2)
     in percent/hour                   Default: 2.0          ! RNITE2 = 2.0 !

     Nighttime HNO3 formation rate (RNITE3)
     in percent/hour                   Default: 2.0          ! RNITE3 = 2.0 !

     H2O2 data input option (MH2O2)    Default: 1            ! MH2O2 =  1   !
     (Used only if MAQCHEM = 1)
        0 = use a monthly background H2O2 value
        1 = read hourly H2O2 concentrations from
            the H2O2.DAT data file

     Monthly H2O2 concentrations
     (Used only if MQACHEM = 1 and
      MH2O2 = 0 or MH2O2 = 1 and all hourly H2O2 data missing)
     (BCKH2O2) in ppb                  Default: 12*1.
     !  BCKH2O2 = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00,
1.00, 1.00 !


 --- Data for SECONDARY ORGANIC AEROSOL (SOA) Option
     (used only if MCHEM = 4)

     The SOA module uses monthly values of:
          Fine particulate concentration in ug/m^3 (BCKPMF)
          Organic fraction of fine particulate     (OFRAC)
          VOC / NOX ratio (after reaction)         (VCNX)
     to characterize the air mass when computing
     the formation of SOA from VOC emissions.
     Typical values for several distinct air mass types are:

        Month    1    2    3    4    5    6    7    8    9   10   11   12
                Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

     Clean Continental
        BCKPMF   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.
        OFRAC  .15  .15  .20  .20  .20  .20  .20  .20  .20  .20  .20  .15
        VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

     Clean Marine (surface)
        BCKPMF  .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5
        OFRAC  .25  .25  .30  .30  .30  .30  .30  .30  .30  .30  .30  .25
        VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

     Urban - low biogenic (controls present)
        BCKPMF  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.
        OFRAC  .20  .20  .25  .25  .25  .25  .25  .25  .20  .20  .20  .20
        VCNX     4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.

     Urban - high biogenic (controls present)
        BCKPMF  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.
        OFRAC  .25  .25  .30  .30  .30  .55  .55  .55  .35  .35  .35  .25
        VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

     Regional Plume
        BCKPMF  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.
        OFRAC  .20  .20  .25  .35  .25  .40  .40  .40  .30  .30  .30  .20
        VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

     Urban - no controls present
        BCKPMF 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100.
```

```
        OFRAC  .30  .30  .35  .35  .35  .55  .55  .55  .35  .35  .35  .30
        VCNX     2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.

     Default: Clean Continental
     !  BCKPMF = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00,
1.00, 1.00 !
     !  OFRAC  = 0.15, 0.15, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20,
0.20, 0.15 !
     !  VCNX   = 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00,
50.00, 50.00, 50.00, 50.00 !


!END!


-----------------------------------------------------------------------------
--


INPUT GROUP: 12 -- Misc. Dispersion and Computational Parameters
---------------

     Horizontal size of puff (m) beyond which
     time-dependent dispersion equations (Heffter)
     are used to determine sigma-y and
     sigma-z (SYTDEP)                           Default: 550.   ! SYTDEP =
5.5E02 !

     Switch for using Heffter equation for sigma z
     as above (0 = Not use Heffter; 1 = use Heffter
     (MHFTSZ)                                   Default: 0      ! MHFTSZ =  0
!

     Stability class used to determine plume
     growth rates for puffs above the boundary
     layer (JSUP)                               Default: 5      ! JSUP =  5
!

     Vertical dispersion constant for stable
     conditions (k1 in Eqn. 2.7-3)  (CONK1)     Default: 0.01   ! CONK1 = .01
!

     Vertical dispersion constant for neutral/
     unstable conditions (k2 in Eqn. 2.7-4)
     (CONK2)                                    Default: 0.1    ! CONK2 = .1
!

     Factor for determining Transition-point from
     Schulman-Scire to Huber-Snyder Building Downwash
     scheme (SS used for Hs < Hb + TBD * HL)
     (TBD)                                      Default: 0.5    ! TBD = .5 !
        TBD < 0   ==> always use Huber-Snyder
        TBD = 1.5 ==> always use Schulman-Scire
        TBD = 0.5 ==> ISC Transition-point

     Range of land use categories for which
     urban dispersion is assumed
     (IURB1, IURB2)                             Default: 10     ! IURB1 =  10
!
                                                         19     ! IURB2 =  19
!
```

```
     Site characterization parameters for single-point Met data files -------
--
     (needed for METFM = 2,3,4,5)

        Land use category for modeling domain
        (ILANDUIN)                            Default: 20      ! ILANDUIN =
20  !

        Roughness length (m) for modeling domain
        (Z0IN)                                Default: 0.25    ! Z0IN = .25
!

        Leaf area index for modeling domain
        (XLAIIN)                              Default: 3.0     ! XLAIIN =
3.0 !

        Elevation above sea level (m)
        (ELEVIN)                              Default: 0.0     ! ELEVIN = .0
!

        Latitude (degrees) for met location
        (XLATIN)                              Default: -999.   ! XLATIN = .0
!

        Longitude (degrees) for met location
        (XLONIN)                              Default: -999.   ! XLONIN = .0
!

     Specialized information for interpreting single-point Met data files ---
--

        Anemometer height (m) (Used only if METFM = 2,3)
        (ANEMHT)                              Default: 10.     ! ANEMHT =
10.0 !

        Form of lateral turbulance data in PROFILE.DAT file
        (Used only if METFM = 4,5 or MTURBVW = 1 or 3)
        (ISIGMAV)                             Default: 1       ! ISIGMAV =
1  !
            0 = read sigma-theta
            1 = read sigma-v

        Choice of mixing heights (Used only if METFM = 4)
        (IMIXCTDM)                            Default: 0       ! IMIXCTDM =
0  !
            0 = read PREDICTED mixing heights
            1 = read OBSERVED mixing heights

     Maximum length of a slug (met. grid units)
     (XMXLEN)                                 Default: 1.0     ! XMXLEN =
1.0 !

     Maximum travel distance of a puff/slug (in
     grid units) during one sampling step
     (XSAMLEN)                                Default: 1.0     ! XSAMLEN =
1.0 !

     Maximum Number of slugs/puffs release from
     one source during one time step
     (MXNEW)                                  Default: 99      ! MXNEW =  99
!
```

```
     Maximum Number of sampling steps for
     one puff/slug during one time step
     (MXSAM)                                    Default: 99     ! MXSAM =  99
!

     Number of iterations used when computing
     the transport wind for a sampling step
     that includes gradual rise (for CALMET
     and PROFILE winds)
     (NCOUNT)                                   Default: 2      ! NCOUNT =  2
!

     Minimum sigma y for a new puff/slug (m)
     (SYMIN)                                    Default: 1.0    ! SYMIN = 1.0
!

     Minimum sigma z for a new puff/slug (m)
     (SZMIN)                                    Default: 1.0    ! SZMIN = 1.0
!

     Default minimum turbulence velocities sigma-v and sigma-w
     for each stability class over land and over water (m/s)
     (SVMIN(12) and SWMIN(12))

                     ----------  LAND  ----------       ---------  WATER  ---
-------
        Stab Class :  A    B    C    D    E    F         A    B    C    D
E    F
                     ---  ---  ---  ---  ---  ---       ---  ---  ---  ---  -
--  ---
     Default SVMIN : .50, .50, .50, .50, .50, .50,      .37, .37, .37, .37,
.37, .37
     Default SWMIN : .20, .12, .08, .06, .03, .016,     .20, .12, .08, .06,
.03, .016

           ! SVMIN = 0.500, 0.500, 0.500, 0.500, 0.500, 0.500, 0.370, 0.370,
0.370, 0.370, 0.370, 0.370!
           ! SWMIN = 0.200, 0.120, 0.080, 0.060, 0.030, 0.016, 0.200, 0.120,
0.080, 0.060, 0.030, 0.016!

     Divergence criterion for dw/dz across puff
     used to initiate adjustment for horizontal
     convergence (1/s)
     Partial adjustment starts at CDIV(1), and
     full adjustment is reached at CDIV(2)
     (CDIV(2))                                  Default: 0.0,0.0  ! CDIV =
.0, .0 !

     Minimum wind speed (m/s) allowed for
     non-calm conditions. Also used as minimum
     speed returned when using power-law
     extrapolation toward surface
     (WSCALM)                                   Default: 0.5    ! WSCALM = .5
!

     Maximum mixing height (m)
     (XMAXZI)                                   Default: 3000.  ! XMAXZI =
3000.0 !

     Minimum mixing height (m)
     (XMINZI)                                   Default: 50.    ! XMINZI =
50.0 !
```

```
     Default wind speed classes --
     5 upper bounds (m/s) are entered;
     the 6th class has no upper limit
     (WSCAT(5))                      Default   :
                                     ISC RURAL : 1.54, 3.09, 5.14, 8.23, 10.8
(10.8+)

                              Wind Speed Class :  1     2     3     4     5
                                                 ---   ---   ---   ---   ---
                                       ! WSCAT = 1.54, 3.09, 5.14, 8.23,
10.80 !

     Default wind speed profile power-law
     exponents for stabilities 1-6
     (PLX0(6))                       Default   : ISC RURAL values
                                     ISC RURAL : .07, .07, .10, .15, .35, .55
                                     ISC URBAN : .15, .15, .20, .25, .30, .30

                               Stability Class :  A     B     C     D     E
F
                                                 ---   ---   ---   ---   ---
---
                                        ! PLX0 = 0.07, 0.07, 0.10, 0.15,
0.35, 0.55 !

     Default potential temperature gradient
     for stable classes E, F (degK/m)
     (PTG0(2))                       Default: 0.020, 0.035
                                        ! PTG0 = 0.020,   0.035 !

     Default plume path coefficients for
     each stability class (used when option
     for partial plume height terrain adjustment
     is selected -- MCTADJ=3)
     (PPC(6))                  Stability Class :  A     B     C     D     E
F
                                  Default  PPC : .50,  .50,  .50,  .50,  .35,
.35
                                                 ---   ---   ---   ---   ---
---
                                        !  PPC = 0.50, 0.50, 0.50, 0.50,
0.35, 0.35 !

     Slug-to-puff transition criterion factor
     equal to sigma-y/length of slug
     (SL2PF)                               Default: 10.        ! SL2PF = 10.0
!

     Puff-splitting control variables ------------------------

       VERTICAL SPLIT
       --------------

       Number of puffs that result every time a puff
       is split - nsplit=2 means that 1 puff splits
       into 2
       (NSPLIT)                            Default:   3        ! NSPLIT =  3
!

       Time(s) of a day when split puffs are eligible to
       be split once again; this is typically set once
```

```
       per day, around sunset before nocturnal shear develops.
       24 values: 0 is midnight (00:00) and 23 is 11 PM (23:00)
       0=do not re-split    1=eligible for re-split
       (IRESPLIT(24))                    Default:  Hour 17 = 1
       !  IRESPLIT = 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0 !

       Split is allowed only if last hour's mixing
       height (m) exceeds a minimum value
       (ZISPLIT)                         Default: 100.       ! ZISPLIT =
100.0 !

       Split is allowed only if ratio of last hour's
       mixing ht to the maximum mixing ht experienced
       by the puff is less than a maximum value (this
       postpones a split until a nocturnal layer develops)
       (ROLDMAX)                         Default: 0.25       ! ROLDMAX =
0.25 !


       HORIZONTAL SPLIT
       ----------------

       Number of puffs that result every time a puff
       is split - nsplith=5 means that 1 puff splits
       into 5
       (NSPLITH)                         Default:   5        ! NSPLITH =  5
!

       Minimum sigma-y (Grid Cells Units) of puff
       before it may be split
       (SYSPLITH)                        Default:  1.0       ! SYSPLITH =
1.0 !

       Minimum puff elongation rate (SYSPLITH/hr) due to
       wind shear, before it may be split
       (SHSPLITH)                        Default:  2.        ! SHSPLITH =
2.0 !

       Minimum concentration (g/m^3) of each
       species in puff before it may be split
       Enter array of NSPEC values; if a single value is
       entered, it will be used for ALL species
       (CNSPLITH)                        Default:  1.0E-07   ! CNSPLITH =
1.0E-07 !

     Integration control variables ------------------------

       Fractional convergence criterion for numerical SLUG
       sampling integration
       (EPSSLUG)                         Default:   1.0e-04  ! EPSSLUG =
1.0E-04 !

       Fractional convergence criterion for numerical AREA
       source integration
       (EPSAREA)                         Default:   1.0e-06  ! EPSAREA =
1.0E-06 !

       Trajectory step-length (m) used for numerical rise
       integration
       (DSRISE)                          Default:   1.0      ! DSRISE = 1.0
!
```

```
      Boundary Condition (BC) Puff control variables ----------------------
-

      Minimum height (m) to which BC puffs are mixed as they are emitted
      (MBCON=2 ONLY).  Actual height is reset to the current mixing height
      at the release point if greater than this minimum.
      (HTMINBC)                          Default:   500.     ! HTMINBC =
500.0 !

      Search radius (km) about a receptor for sampling nearest BC puff.
      BC puffs are typically emitted with a spacing of one grid cell
      length, so the search radius should be greater than DGRIDKM.
      (RSAMPBC)                          Default:   10.      ! RSAMPBC =
10.0 !

      Near-Surface depletion adjustment to concentration profile used when
      sampling BC puffs?
      (MDEPBC)                           Default:   1        ! MDEPBC =  1
!
         0 = Concentration is NOT adjusted for depletion
         1 = Adjust Concentration for depletion

!END!


-----------------------------------------------------------------------------
--


INPUT GROUPS: 13a, 13b, 13c, 13d -- Point source parameters
--------------------------------

---------------
Subgroup (13a)
---------------

     Number of point sources with
     parameters provided below      (NPT1)  No default  !  NPT1 =  1014  !

     Units used for point source
     emissions below                (IPTU)  Default: 1  !  IPTU =   1  !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (13d)        (NSPT1) Default: 0  !  NSPT1 =  0  !

     Number of point sources with
     variable emission parameters
     provided in external file      (NPT2)  No default  !  NPT2 =  0  !

     (If NPT2 > 0, these point
     source emissions are read from
     the file: PTEMARB.DAT)
```

```
!END!

---------------
Subgroup (13b)
---------------
                                       a
          POINT SOURCE: CONSTANT DATA
          -----------------------------

b          c
  Source       X          Y       Stack    Base     Stack    Exit  Exit
Bldg.  Emission
   No.     Coordinate Coordinate Height Elevation Diameter  Vel.  Temp.
Dwash   Rates
              (km)      (km)       (m)      (m)       (m)  (m/s) (deg. K)
  ------   ---------- ---------- ------  ------   -------- ----- -------- ---
-- --------

FWF04    !SRCNAM  = FWF04   !
FWF04    !X =   245.717,  -1331.092,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.2807485579!
FWF04    !SIGYZI = 0.,0.!
FWF04    !FMFAC = 1.! !END!
VETK202  !SRCNAM  = VETK202 !
VETK202  !X =   254.543,  -1332.592,  12.19512, 7.73,  0.91463,  0.00305,
295.22222,  0.0,  0.1989553618!
VETK202  !SIGYZI = 0.,0.!
VETK202  !FMFAC = 1.! !END!
SCTK01   !SRCNAM  = SCTK01  !
SCTK01   !X =   248.228,  -1334.572,  4.57317, 13.00,  0.91463,  0.00305,
294.72222,  0.0,  0.1286731884!
SCTK01   !SIGYZI = 0.,0.!
SCTK01   !FMFAC = 1.! !END!
FWFB144  !SRCNAM  = FWFB144 !
FWFB144  !X =   245.610,  -1330.253,  12.19512, 9.61,  0.91463,  0.00305,
301.02222,  0.0,  0.1186035714!
FWFB144  !SIGYZI = 0.,0.!
FWFB144  !FMFAC = 1.! !END!
FWF14UDE !SRCNAM  = FWF14UDE!
FWF14UDE !X =   245.584,  -1331.252,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.1174169336!
FWF14UDE !SIGYZI = 0.,0.!
FWF14UDE !FMFAC = 1.! !END!
VESULF01 !SRCNAM  = VESULF01!
VESULF01 !X =   254.333,  -1332.943,  6.09756, 9.91,  0.01000,  0.01000,
294.00000,  0.0,  0.1163328265!
VESULF01 !SIGYZI = 0.,0.!
VESULF01 !FMFAC = 1.! !END!
FWF33    !SRCNAM  = FWF33   !
FWF33    !X =   245.731,  -1331.529,  0.91463, 14.52,  0.01000,  0.01000,
294.00000,  0.0,  0.1087136275!
FWF33    !SIGYZI = 0.,0.!
FWF33    !FMFAC = 1.! !END!
FEF53    !SRCNAM  = FEF53   !
FEF53    !X =   255.904,  -1333.704,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0963700316!
FEF53    !SIGYZI = 0.,0.!
FEF53    !FMFAC = 1.! !END!
FWFB143  !SRCNAM  = FWFB143 !
FWFB143  !X =   245.611,  -1330.315,  12.19512, 10.95,  0.91463,  0.00305,
301.02222,  0.0,  0.0899206182!
FWFB143  !SIGYZI = 0.,0.!
```

```
FWFB143  !FMFAC = 1.! !END!
CEF311   !SRCNAM  = CEF311  !
CEF311   !X =   255.414,  -1333.064,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0879113084!
CEF311   !SIGYZI = 0.,0.!
CEF311   !FMFAC = 1.! !END!
VETO2    !SRCNAM  = VETO2   !
VETO2    !X =   254.521,  -1332.781,  15.24390, 9.00,  2.43902,  21.34146,
439.66667,  0.0,  0.0861726002!
VETO2    !SIGYZI = 0.,0.!
VETO2    !FMFAC = 1.! !END!
FWFB610  !SRCNAM  = FWFB610 !
FWFB610  !X =   245.408,  -1330.883,  12.19512, 15.00,  0.91463,  0.00305,
306.20000,  0.0,  0.0795287090!
FWFB610  !SIGYZI = 0.,0.!
FWFB610  !FMFAC = 1.! !END!
CE746    !SRCNAM  = CE746   !
CE746    !X =   255.410,  -1333.813,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0784074536!
CE746    !SIGYZI = 0.,0.!
CE746    !FMFAC = 1.! !END!
FW45FB70 !SRCNAM  = FW45FB70!
FW45FB70 !X =   244.735,  -1330.560,  11.35671, 12.56,  0.91463,  0.00305,
384.03889,  0.0,  0.0739313776!
FW45FB70 !SIGYZI = 0.,0.!
FW45FB70 !FMFAC = 1.! !END!
FWFB131  !SRCNAM  = FWFB131 !
FWFB131  !X =   245.938,  -1330.179,  12.19512, 5.75,  0.91463,  0.00305,
290.63333,  0.0,  0.0709170664!
FWFB131  !SIGYZI = 0.,0.!
FWFB131  !FMFAC = 1.! !END!
FWFTKHON !SRCNAM  = FWFTKHON!
FWFTKHON !X =   245.156,  -1330.765,  0.91463, 14.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0704191016!
FWFTKHON !SIGYZI = 0.,0.!
FWFTKHON !FMFAC = 1.! !END!
FWFB132  !SRCNAM  = FWFB132 !
FWFB132  !X =   245.910,  -1330.180,  12.19512, 6.09,  0.91463,  0.00305,
289.47222,  0.0,  0.0645781112!
FWFB132  !SIGYZI = 0.,0.!
FWFB132  !FMFAC = 1.! !END!
FWF25    !SRCNAM  = FWF25   !
FWF25    !X =   245.418,  -1331.194,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0624414176!
FWF25    !SIGYZI = 0.,0.!
FWF25    !FMFAC = 1.! !END!
CEF081   !SRCNAM  = CEF081  !
CEF081   !X =   255.702,  -1333.461,  6.09756, 8.11,  0.01000,  0.01000,
294.00000,  0.0,  0.0578330438!
CEF081   !SIGYZI = 0.,0.!
CEF081   !FMFAC = 1.! !END!
FWVCS1   !SRCNAM  = FWVCS1  !
FWVCS1   !X =   245.714,  -1330.092,  13.71951, 5.42,  2.74390,  10.21341,
634.11111,  0.0,  0.0497016842!
FWVCS1   !SIGYZI = 0.,0.!
FWVCS1   !FMFAC = 1.! !END!
CE743    !SRCNAM  = CE743   !
CE743    !X =   255.432,  -1333.626,  12.80488, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0472964680!
CE743    !SIGYZI = 0.,0.!
CE743    !FMFAC = 1.! !END!
CEF821   !SRCNAM  = CEF821  !
```

```
CEF821   !X =   255.696,  -1333.273,  1.82927, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0464174330!
CEF821   !SIGYZI = 0.,0.!
CEF821   !FMFAC = 1.! !END!
TP122HE2 !SRCNAM  = TP122HE2!
TP122HE2 !X =   216.670,  -1361.944,  22.86585, 17.00,  2.13415,  5.80793,
440.77778,  0.0,  0.0456161808!
TP122HE2 !SIGYZI = 0.,0.!
TP122HE2 !FMFAC = 1.! !END!
FWFB605  !SRCNAM  = FWFB605 !
FWFB605  !X =   245.546,  -1330.879,  12.19512, 14.51,  0.91463,  0.00305,
300.00000,  0.0,  0.0442498383!
FWFB605  !SIGYZI = 0.,0.!
FWFB605  !FMFAC = 1.! !END!
VEWPFLAR !SRCNAM  = VEWPFLAR!
VEWPFLAR !X =   253.374,  -1333.191,  56.70732, 10.35,  0.10000,  0.01000,
810.77778,  0.0,  0.0431521865!
VEWPFLAR !SIGYZI = 0.,0.!
VEWPFLAR !FMFAC = 1.! !END!
CE753    !SRCNAM  = CE753   !
CE753    !X =   255.436,  -1333.750,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0423825492!
CE753    !SIGYZI = 0.,0.!
CE753    !FMFAC = 1.! !END!
VEDOCK4F !SRCNAM  = VEDOCK4F!
VEDOCK4F !X =   254.911,  -1332.051,  4.57317, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0394877471!
VEDOCK4F !SIGYZI = 0.,0.!
VEDOCK4F !FMFAC = 1.! !END!
CE752    !SRCNAM  = CE752   !
CE752    !X =   255.407,  -1333.719,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0390042301!
CE752    !SIGYZI = 0.,0.!
CE752    !FMFAC = 1.! !END!
VW174    !SRCNAM  = VW174   !
VW174    !X =   249.620,  -1332.312,  15.85366, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0389479300!
VW174    !SIGYZI = 0.,0.!
VW174    !FMFAC = 1.! !END!
CEF355   !SRCNAM  = CEF355  !
CEF355   !X =   256.474,  -1333.405,  4.57317, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0380986201!
CEF355   !SIGYZI = 0.,0.!
CEF355   !FMFAC = 1.! !END!
FEE11TKA !SRCNAM  = FEE11TKA!
FEE11TKA !X =   255.856,  -1333.955,  11.58537, 9.00,  0.91463,  0.00305,
298.71111,  0.0,  0.0375034374!
FEE11TKA !SIGYZI = 0.,0.!
FEE11TKA !FMFAC = 1.! !END!
VW173    !SRCNAM  = VW173   !
VW173    !X =   249.675,  -1332.310,  15.85366, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0367703920!
VW173    !SIGYZI = 0.,0.!
VW173    !FMFAC = 1.! !END!
CE757    !SRCNAM  = CE757   !
CE757    !X =   255.484,  -1333.562,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0355235376!
CE757    !SIGYZI = 0.,0.!
CE757    !FMFAC = 1.! !END!
CE745    !SRCNAM  = CE745   !
CE745    !X =   255.487,  -1333.655,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0355235376!
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CE745    !SIGYZI = 0.,0.!
CE745    !FMFAC = 1.! !END!
CE758    !SRCNAM  = CE758   !
CE758    !X =   255.511,  -1333.529,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0352164177!
CE758    !SIGYZI = 0.,0.!
CE758    !FMFAC = 1.! !END!
EQFU3    !SRCNAM  = EQFU3   !
EQFU3    !X =   239.093,  -1333.821,  9.14634, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0349644219!
EQFU3    !SIGYZI = 0.,0.!
EQFU3    !FMFAC = 1.! !END!
CW572WWT !SRCNAM  = CW572WWT!
CW572WWT !X =   248.345,  -1333.008,  3.04878, 4.80,  0.01000,  0.01000,
294.00000,  0.0,  0.0346430222!
CW572WWT !SIGYZI = 0.,0.!
CW572WWT !FMFAC = 1.! !END!
VW121    !SRCNAM  = VW121   !
VW121    !X =   249.905,  -1332.584,  60.97561, 5.58,  3.75000,  12.19512,
352.44444,  0.0,  0.0349256355!
VW121    !SIGYZI = 0.,0.!
VW121    !FMFAC = 1.! !END!
FWFWWMID !SRCNAM  = FWFWWMID!
FWFWWMID !X =   245.004,  -1331.207,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0335600701!
FWFWWMID !SIGYZI = 0.,0.!
FWFWWMID !FMFAC = 1.! !END!
FEE12TK3 !SRCNAM  = FEE12TK3!
FEE12TK3 !X =   256.463,  -1333.092,  14.63415, 7.00,  0.91463,  0.00305,
295.00000,  0.0,  0.0332477843!
FEE12TK3 !SIGYZI = 0.,0.!
FEE12TK3 !FMFAC = 1.! !END!
CE766    !SRCNAM  = CE766   !
CE766    !X =   255.380,  -1333.720,  6.09756, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0331899512!
CE766    !SIGYZI = 0.,0.!
CE766    !FMFAC = 1.! !END!
VETK112  !SRCNAM  = VETK112 !
VETK112  !X =   254.415,  -1332.909,  10.67073, 9.55,  0.91463,  0.00305,
295.22222,  0.0,  0.0326714173!
VETK112  !SIGYZI = 0.,0.!
VETK112  !FMFAC = 1.! !END!
EQFU1    !SRCNAM  = EQFU1   !
EQFU1    !X =   239.004,  -1333.607,  0.91463, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0311319852!
EQFU1    !SIGYZI = 0.,0.!
EQFU1    !FMFAC = 1.! !END!
VEDOCK3F !SRCNAM  = VEDOCK3F!
VEDOCK3F !X =   254.943,  -1332.174,  4.57317, 3.10,  0.01000,  0.01000,
294.00000,  0.0,  0.0299371050!
VEDOCK3F !SIGYZI = 0.,0.!
VEDOCK3F !FMFAC = 1.! !END!
FEE11TK0 !SRCNAM  = FEE11TK0!
FEE11TK0 !X =   255.856,  -1333.955,  8.53659, 9.00,  0.91463,  0.00305,
297.35000,  0.0,  0.0291528520!
FEE11TK0 !SIGYZI = 0.,0.!
FEE11TK0 !FMFAC = 1.! !END!
CTVENT1  !SRCNAM  = CTVENT1 !
CTVENT1  !X =   280.785,  -1327.527,  4.57317, 1.50,  0.10061,  10.97561,
294.11111,  0.0,  0.0285694291!
CTVENT1  !SIGYZI = 0.,0.!
CTVENT1  !FMFAC = 1.! !END!
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VETK324  !SRCNAM  = VETK324 !
VETK324  !X =   252.523,  -1333.313,  12.19512, 9.23,  0.91463,  0.00305,
295.22222,  0.0,  0.0284178116!
VETK324  !SIGYZI = 0.,0.!
VETK324  !FMFAC = 1.! !END!
VW61     !SRCNAM  = VW61    !
VW61     !X =   249.374,  -1332.382,  14.63415, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0277750752!
VW61     !SIGYZI = 0.,0.!
VW61     !FMFAC = 1.! !END!
VW60     !SRCNAM  = VW60    !
VW60     !X =   249.432,  -1332.443,  14.63415, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0272407496!
VW60     !SIGYZI = 0.,0.!
VW60     !FMFAC = 1.! !END!
CD9835   !SRCNAM  = CD9835  !
CD9835   !X =   254.167,  -1333.792,  7.92683, 12.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0269478044!
CD9835   !SIGYZI = 0.,0.!
CD9835   !FMFAC = 1.! !END!
CE724    !SRCNAM  = CE724   !
CE724    !X =   255.676,  -1333.494,  14.32927, 8.21,  0.91463,  0.00305,
298.55556,  0.0,  0.0260086790!
CE724    !SIGYZI = 0.,0.!
CE724    !FMFAC = 1.! !END!
CW517S14 !SRCNAM  = CW517S14!
CW517S14 !X =   248.745,  -1333.462,  3.04878, 9.56,  0.01000,  0.01000,
294.00000,  0.0,  0.0258156081!
CW517S14 !SIGYZI = 0.,0.!
CW517S14 !FMFAC = 1.! !END!
EQ24     !SRCNAM  = EQ24    !
EQ24     !X =   238.807,  -1333.486,  14.63415, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0252862069!
EQ24     !SIGYZI = 0.,0.!
EQ24     !FMFAC = 1.! !END!
VETK355  !SRCNAM  = VETK355 !
VETK355  !X =   252.462,  -1333.159,  14.63415, 7.57,  0.91463,  0.00305,
295.22222,  0.0,  0.0246822044!
VETK355  !SIGYZI = 0.,0.!
VETK355  !FMFAC = 1.! !END!
VE90TK67 !SRCNAM  = VE90TK67!
VE90TK67 !X =   253.319,  -1333.164,  1.00000, 9.95,  0.01000,  0.01000,
294.00000,  0.0,  0.0245134197!
VE90TK67 !SIGYZI = 0.,0.!
VE90TK67 !FMFAC = 1.! !END!
VE90TK66 !SRCNAM  = VE90TK66!
VE90TK66 !X =   253.372,  -1333.130,  4.87805, 10.08,  1.00000,  0.00305,
295.22222,  0.0,  0.0245134197!
VE90TK66 !SIGYZI = 0.,0.!
VE90TK66 !FMFAC = 1.! !END!
EQFU2    !SRCNAM  = EQFU2   !
EQFU2    !X =   239.066,  -1333.854,  9.14634, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0244645955!
EQFU2    !SIGYZI = 0.,0.!
EQFU2    !FMFAC = 1.! !END!
VETK323  !SRCNAM  = VETK323 !
VETK323  !X =   252.523,  -1333.313,  12.19512, 9.23,  0.91463,  0.00305,
295.22222,  0.0,  0.0243402775!
VETK323  !SIGYZI = 0.,0.!
VETK323  !FMFAC = 1.! !END!
FWFB509  !SRCNAM  = FWFB509 !
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FWFB509  !X =   245.142,  -1331.202,  12.19512, 15.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0240891637!
FWFB509  !SIGYZI = 0.,0.!
FWFB509  !FMFAC = 1.! !END!
VE16COM3 !SRCNAM  = VE16COM3!
VE16COM3 !X =   252.636,  -1333.402,  9.45122, 10.00,  0.35976,  21.34146,
629.66667,  0.0,  0.0228992499!
VE16COM3 !SIGYZI = 0.,0.!
VE16COM3 !FMFAC = 1.! !END!
VE16COM2 !SRCNAM  = VE16COM2!
VE16COM2 !X =   252.635,  -1333.371,  9.45122, 9.88,  0.35976,  21.34146,
629.66667,  0.0,  0.0225743012!
VE16COM2 !SIGYZI = 0.,0.!
VE16COM2 !FMFAC = 1.! !END!
EQ19     !SRCNAM  = EQ19    !
EQ19     !X =   238.810,  -1333.581,  14.63415, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0224197543!
EQ19     !SIGYZI = 0.,0.!
EQ19     !FMFAC = 1.! !END!
VETK111  !SRCNAM  = VETK111 !
VETK111  !X =   254.416,  -1332.940,  10.97561, 9.88,  0.91463,  0.00305,
295.22222,  0.0,  0.0220450680!
VETK111  !SIGYZI = 0.,0.!
VETK111  !FMFAC = 1.! !END!
VE90TK85 !SRCNAM  = VE90TK85!
VE90TK85 !X =   253.428,  -1333.128,  1.00000, 10.45,  0.01000,  0.01000,
294.00000,  0.0,  0.0219929364!
VE90TK85 !SIGYZI = 0.,0.!
VE90TK85 !FMFAC = 1.! !END!
VW90     !SRCNAM  = VW90    !
VW90     !X =   249.351,  -1332.540,  17.37805, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0219436082!
VW90     !SIGYZI = 0.,0.!
VW90     !FMFAC = 1.! !END!
KIFLARE  !SRCNAM  = KIFLARE !
KIFLARE  !X =   252.850,  -1332.304,  3.96341, 4.00,  0.10000,  0.01000,
1255.22222,  0.0,  0.0202713113!
KIFLARE  !SIGYZI = 0.,0.!
KIFLARE  !FMFAC = 1.! !END!
VE90TK65 !SRCNAM  = VE90TK65!
VE90TK65 !X =   253.401,  -1333.129,  3.04878, 10.27,  1.00000,  0.00305,
295.22222,  0.0,  0.0190235855!
VE90TK65 !SIGYZI = 0.,0.!
VE90TK65 !FMFAC = 1.! !END!
FWF01    !SRCNAM  = FWF01   !
FWF01    !X =   245.803,  -1331.151,  0.91463, 14.51,  0.01000,  0.01000,
294.00000,  0.0,  0.0184771745!
FWF01    !SIGYZI = 0.,0.!
FWF01    !FMFAC = 1.! !END!
VE16COM1 !SRCNAM  = VE16COM1!
VE16COM1 !X =   252.635,  -1333.371,  9.45122, 9.88,  0.25305,  21.34146,
629.66667,  0.0,  0.0183045048!
VE16COM1 !SIGYZI = 0.,0.!
VE16COM1 !FMFAC = 1.! !END!
VW92     !SRCNAM  = VW92    !
VW92     !X =   249.326,  -1332.602,  17.37805, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0175780114!
VW92     !SIGYZI = 0.,0.!
VW92     !FMFAC = 1.! !END!
CEF211   !SRCNAM  = CEF211  !
CEF211   !X =   255.482,  -1333.500,  4.57317, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0165897257!
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CEF211   !SIGYZI = 0.,0.!
CEF211   !FMFAC = 1.! !END!
FWF14    !SRCNAM  = FWF14   !
FWF14    !X =   245.583,  -1331.221,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0163839291!
FWF14    !SIGYZI = 0.,0.!
FWF14    !FMFAC = 1.! !END!
VELS1    !SRCNAM  = VELS1   !
VELS1    !X =   253.236,  -1333.167,  0.91463, 9.44,  0.01000,  0.01000,
294.00000,  0.0,  0.0159429364!
VELS1    !SIGYZI = 0.,0.!
VELS1    !FMFAC = 1.! !END!
FWFS1    !SRCNAM  = FWFS1   !
FWFS1    !X =   245.715,  -1331.028,  13.41463, 15.00,  3.35366,  8.23171,
308.00000,  0.0,  0.0156641660!
FWFS1    !SIGYZI = 0.,0.!
FWFS1    !FMFAC = 1.! !END!
VEREF2FL !SRCNAM  = VEREF2FL!
VEREF2FL !X =   252.661,  -1333.309,  64.93902, 9.23,  0.10000,  0.01000,
810.77778,  0.0,  0.0155974921!
VEREF2FL !SIGYZI = 0.,0.!
VEREF2FL !FMFAC = 1.! !END!
NSS400M2 !SRCNAM  = NSS400M2!
NSS400M2 !X =   257.324,  -1332.378,  15.24390, 4.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0140630055!
NSS400M2 !SIGYZI = 0.,0.!
NSS400M2 !FMFAC = 1.! !END!
KIDEGAS  !SRCNAM  = KIDEGAS !
KIDEGAS  !X =   253.026,  -1331.768,  3.04878, 4.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0140550781!
KIDEGAS  !SIGYZI = 0.,0.!
KIDEGAS  !FMFAC = 1.! !END!
TRWWTP   !SRCNAM  = TRWWTP  !
TRWWTP   !X =   249.164,  -1332.732,  4.57317, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0136865237!
TRWWTP   !SIGYZI = 0.,0.!
TRWWTP   !FMFAC = 1.! !END!
CEF221   !SRCNAM  = CEF221  !
CEF221   !X =   255.478,  -1333.375,  6.09756, 8.46,  0.01000,  0.01000,
294.00000,  0.0,  0.0134397778!
CEF221   !SIGYZI = 0.,0.!
CEF221   !FMFAC = 1.! !END!
VW48     !SRCNAM  = VW48    !
VW48     !X =   249.572,  -1332.533,  12.19512, 4.93,  0.91463,  0.00305,
298.55556,  0.0,  0.0134239860!
VW48     !SIGYZI = 0.,0.!
VW48     !FMFAC = 1.! !END!
FWF39    !SRCNAM  = FWF39   !
FWF39    !X =   245.783,  -1331.402,  0.91463, 13.85,  0.01000,  0.01000,
294.00000,  0.0,  0.0133715289!
FWF39    !SIGYZI = 0.,0.!
FWF39    !FMFAC = 1.! !END!
VETK82   !SRCNAM  = VETK82  !
VETK82   !X =   253.960,  -1333.393,  13.41463, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0132032377!
VETK82   !SIGYZI = 0.,0.!
VETK82   !FMFAC = 1.! !END!
VW142    !SRCNAM  = VW142   !
VW142    !X =   249.274,  -1332.698,  15.24390, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0129011367!
VW142    !SIGYZI = 0.,0.!
VW142    !FMFAC = 1.! !END!
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FWFB4016 !SRCNAM  = FWFB4016!
FWFB4016 !X =   244.280,  -1330.979,  14.63415, 15.60,  0.91463,  0.00305,
299.95000,  0.0,  0.0124186592!
FWFB4016 !SIGYZI = 0.,0.!
FWFB4016 !FMFAC = 1.! !END!
VWT1F    !SRCNAM  = VWT1F   !
VWT1F    !X =   249.571,  -1332.500,  6.09756, 4.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0121584000!
VWT1F    !SIGYZI = 0.,0.!
VWT1F    !FMFAC = 1.! !END!
VW83F    !SRCNAM  = VW83F   !
VW83F    !X =   249.072,  -1333.298,  0.91463, 7.92,  0.01000,  0.01000,
294.00000,  0.0,  0.0121139752!
VW83F    !SIGYZI = 0.,0.!
VW83F    !FMFAC = 1.! !END!
FWFB4014 !SRCNAM  = FWFB4014!
FWFB4014 !X =   244.196,  -1330.982,  14.63415, 16.46,  0.91463,  0.00305,
298.44444,  0.0,  0.0121051658!
FWFB4014 !SIGYZI = 0.,0.!
FWFB4014 !FMFAC = 1.! !END!
VEQBTXFE !SRCNAM  = VEQBTXFE!
VEQBTXFE !X =   252.524,  -1333.343,  0.91463, 9.55,  0.01000,  0.01000,
294.00000,  0.0,  0.0119871268!
VEQBTXFE !SIGYZI = 0.,0.!
VEQBTXFE !FMFAC = 1.! !END!
FWFWW    !SRCNAM  = FWFWW   !
FWFWW    !X =   244.716,  -1330.811,  0.91463, 14.02,  0.01000,  0.01000,
294.00000,  0.0,  0.0118842285!
FWFWW    !SIGYZI = 0.,0.!
FWFWW    !FMFAC = 1.! !END!
NSS400M1 !SRCNAM  = NSS400M1!
NSS400M1 !X =   257.518,  -1332.372,  15.24390, 4.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0117273716!
NSS400M1 !SIGYZI = 0.,0.!
NSS400M1 !FMFAC = 1.! !END!
NSS400M3 !SRCNAM  = NSS400M3!
NSS400M3 !X =   257.131,  -1332.385,  15.24390, 4.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0116719010!
NSS400M3 !SIGYZI = 0.,0.!
NSS400M3 !FMFAC = 1.! !END!
NSS400M4 !SRCNAM  = NSS400M4!
NSS400M4 !X =   256.937,  -1332.391,  15.24390, 4.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0115413147!
NSS400M4 !SIGYZI = 0.,0.!
NSS400M4 !FMFAC = 1.! !END!
VWSHIPFU !SRCNAM  = VWSHIPFU!
VWSHIPFU !X =   249.955,  -1332.458,  24.39024, 4.36,  0.01000,  0.01000,
294.00000,  0.0,  0.0113625446!
VWSHIPFU !SIGYZI = 0.,0.!
VWSHIPFU !FMFAC = 1.! !END!
FEF26    !SRCNAM  = FEF26   !
FEF26    !X =   255.887,  -1334.049,  0.91463, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0113146129!
FEF26    !SIGYZI = 0.,0.!
FEF26    !FMFAC = 1.! !END!
FWFS6    !SRCNAM  = FWFS6   !
FWFS6    !X =   245.579,  -1331.096,  14.02439, 15.00,  6.09756,  7.92683,
305.22222,  0.0,  0.0112988632!
FWFS6    !SIGYZI = 0.,0.!
FWFS6    !FMFAC = 1.! !END!
CEF290   !SRCNAM  = CEF290  !
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CEF290   !X =   255.469,  -1333.095,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0109915858!
CEF290   !SIGYZI = 0.,0.!
CEF290   !FMFAC = 1.! !END!
VW0112   !SRCNAM  = VW0112  !
VW0112   !X =   249.219,  -1332.761,  3.04878, 4.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0106470550!
VW0112   !SIGYZI = 0.,0.!
VW0112   !FMFAC = 1.! !END!
EQ51     !SRCNAM  = EQ51    !
EQ51     !X =   238.867,  -1333.641,  5.48780, 18.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0105050763!
EQ51     !SIGYZI = 0.,0.!
EQ51     !FMFAC = 1.! !END!
EQ50     !SRCNAM  = EQ50    !
EQ50     !X =   238.871,  -1333.766,  5.48780, 18.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0105050763!
EQ50     !SIGYZI = 0.,0.!
EQ50     !FMFAC = 1.! !END!
FEE11TKF !SRCNAM  = FEE11TKF!
FEE11TKF !X =   255.581,  -1333.964,  14.63415, 9.00,  0.91463,  0.00305,
297.33889,  0.0,  0.0103955211!
FEE11TKF !SIGYZI = 0.,0.!
FEE11TKF !FMFAC = 1.! !END!
WT131    !SRCNAM  = WT131   !
WT131    !X =   254.610,  -1333.839,  12.80488, 12.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0103248888!
WT131    !SIGYZI = 0.,0.!
WT131    !FMFAC = 1.! !END!
FWFB115  !SRCNAM  = FWFB115 !
FWFB115  !X =   245.719,  -1330.250,  12.80488, 7.79,  0.91463,  0.00305,
299.46111,  0.0,  0.0101990484!
FWFB115  !SIGYZI = 0.,0.!
FWFB115  !FMFAC = 1.! !END!
FWFTKVOC !SRCNAM  = FWFTKVOC!
FWFTKVOC !X =   245.488,  -1330.787,  3.04878, 14.18,  0.01000,  0.01000,
294.00000,  0.0,  0.0101054739!
FWFTKVOC !SIGYZI = 0.,0.!
FWFTKVOC !FMFAC = 1.! !END!
FWFB510  !SRCNAM  = FWFB510 !
FWFB510  !X =   245.252,  -1331.199,  12.19512, 15.00,  0.91463,  0.00305,
296.84444,  0.0,  0.0100407110!
FWFB510  !SIGYZI = 0.,0.!
FWFB510  !FMFAC = 1.! !END!
VETK79   !SRCNAM  = VETK79  !
VETK79   !X =   253.936,  -1333.455,  12.80488, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0097359535!
VETK79   !SIGYZI = 0.,0.!
VETK79   !FMFAC = 1.! !END!
VW175    !SRCNAM  = VW175   !
VW175    !X =   249.804,  -1332.868,  4.57317, 7.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0125630633!
VW175    !SIGYZI = 0.,0.!
VW175    !FMFAC = 1.! !END!
VE90CT8  !SRCNAM  = VE90CT8 !
VE90CT8  !X =   253.372,  -1333.130,  12.19512, 10.08,  6.09756,  9.14634,
294.11111,  0.0,  0.0095228175!
VE90CT8  !SIGYZI = 0.,0.!
VE90CT8  !FMFAC = 1.! !END!
EQ10     !SRCNAM  = EQ10    !
EQ10     !X =   239.045,  -1334.042,  100.00000, 18.00,  0.10000,  0.01000,
810.77778,  0.0,  0.0085993578!
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EQ10     !SIGYZI = 0.,0.!
EQ10     !FMFAC = 1.! !END!
EQ11     !SRCNAM  = EQ11    !
EQ11     !X =   239.046,  -1334.073,  100.00000, 18.00,  0.10000,  0.01000,
810.77778,  0.0,  0.0085993578!
EQ11     !SIGYZI = 0.,0.!
EQ11     !FMFAC = 1.! !END!
VW12F    !SRCNAM  = VW12F   !
VW12F    !X =   249.966,  -1332.801,  6.09756, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0085813611!
VW12F    !SIGYZI = 0.,0.!
VW12F    !FMFAC = 1.! !END!
VWMVRUF  !SRCNAM  = VWMVRUF !
VWMVRUF  !X =   249.383,  -1332.694,  6.09756, 4.22,  0.01000,  0.01000,
294.00000,  0.0,  0.0084604031!
VWMVRUF  !SIGYZI = 0.,0.!
VWMVRUF  !FMFAC = 1.! !END!
IPT132   !SRCNAM  = IPT132  !
IPT132   !X =   279.726,  -1326.441,  6.09756, 5.00,  0.91463,  0.00305,
293.55556,  0.0,  0.0083888363!
IPT132   !SIGYZI = 0.,0.!
IPT132   !FMFAC = 1.! !END!
IPT133   !SRCNAM  = IPT133  !
IPT133   !X =   279.754,  -1326.440,  6.09756, 5.06,  0.91463,  0.00305,
293.55556,  0.0,  0.0083279373!
IPT133   !SIGYZI = 0.,0.!
IPT133   !FMFAC = 1.! !END!
VEBTX1FE !SRCNAM  = VEBTX1FE!
VEBTX1FE !X =   254.333,  -1332.943,  0.91463, 9.91,  0.01000,  0.01000,
294.00000,  0.0,  0.0083048377!
VEBTX1FE !SIGYZI = 0.,0.!
VEBTX1FE !FMFAC = 1.! !END!
VW9      !SRCNAM  = VW9     !
VW9      !X =   249.489,  -1332.536,  12.19512, 4.45,  0.91463,  0.00305,
298.55556,  0.0,  0.0082146442!
VW9      !SIGYZI = 0.,0.!
VW9      !FMFAC = 1.! !END!
VETKFME1 !SRCNAM  = VETKFME1!
VETKFME1 !X =   254.015,  -1333.358,  0.91463, 12.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0081368615!
VETKFME1 !SIGYZI = 0.,0.!
VETKFME1 !FMFAC = 1.! !END!
FEE18TK1 !SRCNAM  = FEE18TK1!
FEE18TK1 !X =   256.913,  -1333.329,  12.80488, 7.86,  0.91463,  0.00305,
294.81111,  0.0,  0.0079047523!
FEE18TK1 !SIGYZI = 0.,0.!
FEE18TK1 !FMFAC = 1.! !END!
VE16COMP !SRCNAM  = VE16COMP!
VE16COMP !X =   252.635,  -1333.371,  9.45122, 9.88,  0.25305,  21.34146,
629.66667,  0.0,  0.0079024738!
VE16COMP !SIGYZI = 0.,0.!
VE16COMP !FMFAC = 1.! !END!
FEF112   !SRCNAM  = FEF112  !
FEF112   !X =   255.961,  -1333.795,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0078449453!
FEF112   !SIGYZI = 0.,0.!
FEF112   !FMFAC = 1.! !END!
FWFB101  !SRCNAM  = FWFB101 !
FWFB101  !X =   246.084,  -1330.456,  12.80488, 8.10,  0.91463,  0.00305,
299.22222,  0.0,  0.0077968141!
FWFB101  !SIGYZI = 0.,0.!
FWFB101  !FMFAC = 1.! !END!
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FWFB501  !SRCNAM  = FWFB501 !
FWFB501  !X =   245.599,  -1330.815,  12.19512, 14.71,  0.91463,  0.00305,
302.53889,  0.0,  0.0077655141!
FWFB501  !SIGYZI = 0.,0.!
FWFB501  !FMFAC = 1.! !END!
VECRUVAC !SRCNAM  = VECRUVAC!
VECRUVAC !X =   253.732,  -1333.150,  0.91463, 11.11,  0.01000,  0.01000,
294.00000,  0.0,  0.0077485044!
VECRUVAC !SIGYZI = 0.,0.!
VECRUVAC !FMFAC = 1.! !END!
WTFUG1   !SRCNAM  = WTFUG1  !
WTFUG1   !X =   254.494,  -1333.687,  0.91463, 12.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0075487242!
WTFUG1   !SIGYZI = 0.,0.!
WTFUG1   !FMFAC = 1.! !END!
VEPD6    !SRCNAM  = VEPD6   !
VEPD6    !X =   252.341,  -1332.819,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0075140433!
VEPD6    !SIGYZI = 0.,0.!
VEPD6    !FMFAC = 1.! !END!
FWFB102  !SRCNAM  = FWFB102 !
FWFB102  !X =   246.026,  -1330.333,  12.80488, 6.95,  0.91463,  0.00305,
299.30000,  0.0,  0.0073410796!
FWFB102  !SIGYZI = 0.,0.!
FWFB102  !FMFAC = 1.! !END!
VW197    !SRCNAM  = VW197   !
VW197    !X =   249.364,  -1332.945,  17.07317, 6.63,  0.91463,  0.00305,
294.11111,  0.0,  0.0072523141!
VW197    !SIGYZI = 0.,0.!
VW197    !FMFAC = 1.! !END!
CE561    !SRCNAM  = CE561   !
CE561    !X =   255.980,  -1332.641,  6.09756, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0072062408!
CE561    !SIGYZI = 0.,0.!
CE561    !FMFAC = 1.! !END!
EQ40     !SRCNAM  = EQ40    !
EQ40     !X =   239.055,  -1333.479,  5.48780, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0070637582!
EQ40     !SIGYZI = 0.,0.!
EQ40     !FMFAC = 1.! !END!
WT144    !SRCNAM  = WT144   !
WT144    !X =   254.501,  -1333.906,  14.63415, 12.00,  0.91463,  0.00305,
305.22222,  0.0,  0.0070234074!
WT144    !SIGYZI = 0.,0.!
WT144    !FMFAC = 1.! !END!
VW196    !SRCNAM  = VW196   !
VW196    !X =   249.392,  -1332.975,  17.07317, 7.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0069640519!
VW196    !SIGYZI = 0.,0.!
VW196    !FMFAC = 1.! !END!
TP122T53 !SRCNAM  = TP122T53!
TP122T53 !X =   217.595,  -1361.356,  57.92683, 16.19,  0.10000,  0.01000,
1273.00000,  0.0,  0.0071817763!
TP122T53 !SIGYZI = 0.,0.!
TP122T53 !FMFAC = 1.! !END!
FWFB160  !SRCNAM  = FWFB160 !
FWFB160  !X =   245.722,  -1330.342,  14.63415, 9.47,  0.91463,  0.00305,
297.88889,  0.0,  0.0067057141!
FWFB160  !SIGYZI = 0.,0.!
FWFB160  !FMFAC = 1.! !END!
VW88     !SRCNAM  = VW88    !
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VW88     !X =   249.377,  -1332.507,  17.37805, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0066282044!
VW88     !SIGYZI = 0.,0.!
VW88     !FMFAC = 1.! !END!
CEF341   !SRCNAM  = CEF341  !
CEF341   !X =   255.333,  -1333.129,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0065616250!
CEF341   !SIGYZI = 0.,0.!
CEF341   !FMFAC = 1.! !END!
FEF55    !SRCNAM  = FEF55   !
FEF55    !X =   255.822,  -1333.738,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0065440168!
FEF55    !SIGYZI = 0.,0.!
FEF55    !FMFAC = 1.! !END!
VW10     !SRCNAM  = VW10    !
VW10     !X =   249.517,  -1332.566,  12.19512, 4.86,  0.91463,  0.00305,
298.55556,  0.0,  0.0064802724!
VW10     !SIGYZI = 0.,0.!
VW10     !FMFAC = 1.! !END!
FEE29T21 !SRCNAM  = FEE29T21!
FEE29T21 !X =   255.755,  -1334.240,  12.19512, 9.00,  0.91463,  0.00305,
298.60556,  0.0,  0.0063576449!
FEE29T21 !SIGYZI = 0.,0.!
FEE29T21 !FMFAC = 1.! !END!
FWF26    !SRCNAM  = FWF26   !
FWF26    !X =   245.565,  -1331.471,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0062647214!
FWF26    !SIGYZI = 0.,0.!
FWF26    !FMFAC = 1.! !END!
VETK333  !SRCNAM  = VETK333 !
VETK333  !X =   252.631,  -1333.247,  14.63415, 8.56,  0.91463,  0.00305,
295.22222,  0.0,  0.0062511661!
VETK333  !SIGYZI = 0.,0.!
VETK333  !FMFAC = 1.! !END!
CE726    !SRCNAM  = CE726   !
CE726    !X =   255.597,  -1333.621,  14.32927, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0062421468!
CE726    !SIGYZI = 0.,0.!
CE726    !FMFAC = 1.! !END!
VW1F     !SRCNAM  = VW1F    !
VW1F     !X =   249.465,  -1332.660,  1.82927, 5.25,  0.01000,  0.01000,
294.00000,  0.0,  0.0061775939!
VW1F     !SIGYZI = 0.,0.!
VW1F     !FMFAC = 1.! !END!
WT134    !SRCNAM  = WT134   !
WT134    !X =   254.687,  -1333.649,  14.63415, 12.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0061380515!
WT134    !SIGYZI = 0.,0.!
WT134    !FMFAC = 1.! !END!
FEE11TKN !SRCNAM  = FEE11TKN!
FEE11TKN !X =   255.779,  -1334.145,  14.63415, 9.00,  0.91463,  0.00305,
300.02222,  0.0,  0.0060980157!
FEE11TKN !SIGYZI = 0.,0.!
FEE11TKN !FMFAC = 1.! !END!
MIGVENT  !SRCNAM  = MIGVENT !
MIGVENT  !X =   281.478,  -1337.742,  3.35366, 1.50,  0.15244,  0.01000,
452.44444,  0.0,  0.0060898993!
MIGVENT  !SIGYZI = 0.,0.!
MIGVENT  !FMFAC = 1.! !END!
FWFB113  !SRCNAM  = FWFB113 !
FWFB113  !X =   245.839,  -1330.526,  12.19512, 11.73,  0.91463,  0.00305,
298.01111,  0.0,  0.0059628934!
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FWFB113  !SIGYZI = 0.,0.!
FWFB113  !FMFAC = 1.! !END!
VL177    !SRCNAM  = VL177   !
VL177    !X =   249.037,  -1333.079,  16.46341, 6.57,  0.91463,  0.00305,
296.88889,  0.0,  0.0059105938!
VL177    !SIGYZI = 0.,0.!
VL177    !FMFAC = 1.! !END!
VETK51   !SRCNAM  = VETK51  !
VETK51   !X =   254.211,  -1333.446,  8.84146, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0058252407!
VETK51   !SIGYZI = 0.,0.!
VETK51   !FMFAC = 1.! !END!
CE744    !SRCNAM  = CE744   !
CE744    !X =   255.434,  -1333.687,  12.80488, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0057165255!
CE744    !SIGYZI = 0.,0.!
CE744    !FMFAC = 1.! !END!
CE742    !SRCNAM  = CE742   !
CE742    !X =   255.405,  -1333.658,  7.92683, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0056824850!
CE742    !SIGYZI = 0.,0.!
CE742    !FMFAC = 1.! !END!
FEE11TK2 !SRCNAM  = FEE11TK2!
FEE11TK2 !X =   255.721,  -1334.054,  9.14634, 9.00,  0.91463,  0.00305,
304.66667,  0.0,  0.0055927850!
FEE11TK2 !SIGYZI = 0.,0.!
FEE11TK2 !FMFAC = 1.! !END!
WT142    !SRCNAM  = WT142   !
WT142    !X =   254.417,  -1333.845,  14.63415, 12.00,  0.91463,  0.00305,
305.22222,  0.0,  0.0055911996!
WT142    !SIGYZI = 0.,0.!
WT142    !FMFAC = 1.! !END!
WT143    !SRCNAM  = WT143   !
WT143    !X =   254.364,  -1333.941,  14.63415, 12.00,  0.91463,  0.00305,
305.22222,  0.0,  0.0055911996!
WT143    !SIGYZI = 0.,0.!
WT143    !FMFAC = 1.! !END!
FEE11TKM !SRCNAM  = FEE11TKM!
FEE11TKM !X =   255.917,  -1334.109,  14.63415, 9.00,  0.91463,  0.00305,
295.50000,  0.0,  0.0055890156!
FEE11TKM !SIGYZI = 0.,0.!
FEE11TKM !FMFAC = 1.! !END!
CWF99A   !SRCNAM  = CWF99A  !
CWF99A   !X =   248.769,  -1333.337,  3.04878, 8.23,  0.01000,  0.01000,
294.00000,  0.0,  0.0055492842!
CWF99A   !SIGYZI = 0.,0.!
CWF99A   !FMFAC = 1.! !END!
FEE18TK2 !SRCNAM  = FEE18TK2!
FEE18TK2 !X =   256.686,  -1333.148,  12.80488, 7.00,  0.91463,  0.00305,
297.52222,  0.0,  0.0055399604!
FEE18TK2 !SIGYZI = 0.,0.!
FEE18TK2 !FMFAC = 1.! !END!
FWFB3043 !SRCNAM  = FWFB3043!
FWFB3043 !X =   243.799,  -1330.589,  14.63415, 14.14,  0.91463,  0.00305,
306.60000,  0.0,  0.0054842483!
FWFB3043 !SIGYZI = 0.,0.!
FWFB3043 !FMFAC = 1.! !END!
VWDOCKS  !SRCNAM  = VWDOCKS !
VWDOCKS  !X =   249.956,  -1332.489,  1.82927, 4.64,  0.01000,  0.01000,
294.00000,  0.0,  0.0052571371!
VWDOCKS  !SIGYZI = 0.,0.!
VWDOCKS  !FMFAC = 1.! !END!
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FWFS8    !SRCNAM  = FWFS8   !
FWFS8    !X =   245.392,  -1331.258,  10.67073, 15.00,  6.70732,  7.31707,
308.00000,  0.0,  0.0052499132!
FWFS8    !SIGYZI = 0.,0.!
FWFS8    !FMFAC = 1.! !END!
FWFB142  !SRCNAM  = FWFB142 !
FWFB142  !X =   245.357,  -1330.136,  12.80488, 6.41,  0.91463,  0.00305,
299.12778,  0.0,  0.0051511098!
FWFB142  !SIGYZI = 0.,0.!
FWFB142  !FMFAC = 1.! !END!
VEPD3    !SRCNAM  = VEPD3   !
VEPD3    !X =   254.943,  -1332.174,  0.91463, 3.10,  0.01000,  0.01000,
294.00000,  0.0,  0.0051014876!
VEPD3    !SIGYZI = 0.,0.!
VEPD3    !FMFAC = 1.! !END!
CE851    !SRCNAM  = CE851   !
CE851    !X =   249.708,  -1333.339,  4.57317, 10.57,  0.01000,  0.01000,
294.00000,  0.0,  0.0048604431!
CE851    !SIGYZI = 0.,0.!
CE851    !FMFAC = 1.! !END!
WT117    !SRCNAM  = WT117   !
WT117    !X =   254.744,  -1333.709,  12.43902, 11.52,  0.91463,  0.00305,
310.77778,  0.0,  0.0047914383!
WT117    !SIGYZI = 0.,0.!
WT117    !FMFAC = 1.! !END!
VETK152  !SRCNAM  = VETK152 !
VETK152  !X =   254.576,  -1332.780,  12.19512, 9.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0047569778!
VETK152  !SIGYZI = 0.,0.!
VETK152  !FMFAC = 1.! !END!
VW198    !SRCNAM  = VW198   !
VW198    !X =   249.338,  -1332.977,  17.07317, 5.98,  0.91463,  0.00305,
294.11111,  0.0,  0.0047279248!
VW198    !SIGYZI = 0.,0.!
VW198    !FMFAC = 1.! !END!
FEE11TKK !SRCNAM  = FEE11TKK!
FEE11TKK !X =   255.859,  -1334.050,  14.63415, 9.00,  0.91463,  0.00305,
298.90556,  0.0,  0.0046866080!
FEE11TKK !SIGYZI = 0.,0.!
FEE11TKK !FMFAC = 1.! !END!
VW2122F  !SRCNAM  = VW2122F !
VW2122F  !X =   250.044,  -1332.642,  4.57317, 6.25,  0.01000,  0.01000,
294.00000,  0.0,  0.0046741552!
VW2122F  !SIGYZI = 0.,0.!
VW2122F  !FMFAC = 1.! !END!
CEVC447  !SRCNAM  = CEVC447 !
CEVC447  !X =   255.957,  -1332.798,  21.34146, 1.50,  3.81098,  7.01220,
468.00000,  0.0,  0.0061292737!
CEVC447  !SIGYZI = 0.,0.!
CEVC447  !FMFAC = 1.! !END!
VETKFMEP !SRCNAM  = VETKFMEP!
VETKFMEP !X =   254.555,  -1332.968,  0.91463, 9.12,  0.01000,  0.01000,
294.00000,  0.0,  0.0045876891!
VETKFMEP !SIGYZI = 0.,0.!
VETKFMEP !FMFAC = 1.! !END!
VEFCCU1F !SRCNAM  = VEFCCU1F!
VEFCCU1F !X =   254.418,  -1333.001,  0.91463, 10.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0045453958!
VEFCCU1F !SIGYZI = 0.,0.!
VEFCCU1F !FMFAC = 1.! !END!
SH12     !SRCNAM  = SH12    !
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SH12     !X =   241.949,  -1335.108,  23.78049, 18.00,  0.60976,  23.01829,
616.33333,  0.0,  0.0044834259!
SH12     !SIGYZI = 0.,0.!
SH12     !FMFAC = 1.! !END!
CEF361   !SRCNAM  = CEF361  !
CEF361   !X =   255.277,  -1333.101,  3.04878, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0044418046!
CEF361   !SIGYZI = 0.,0.!
CEF361   !FMFAC = 1.! !END!
FWFB147  !SRCNAM  = FWFB147 !
FWFB147  !X =   245.362,  -1330.292,  12.80488, 10.74,  0.91463,  0.00305,
300.47222,  0.0,  0.0043331839!
FWFB147  !SIGYZI = 0.,0.!
FWFB147  !FMFAC = 1.! !END!
VETKFMWP !SRCNAM  = VETKFMWP!
VETKFMWP !X =   253.328,  -1333.444,  0.91463, 11.49,  0.01000,  0.01000,
294.00000,  0.0,  0.0042846432!
VETKFMWP !SIGYZI = 0.,0.!
VETKFMWP !FMFAC = 1.! !END!
CE775    !SRCNAM  = CE775   !
CE775    !X =   255.357,  -1333.878,  15.24390, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0042386434!
CE775    !SIGYZI = 0.,0.!
CE775    !FMFAC = 1.! !END!
VECOKER1 !SRCNAM  = VECOKER1!
VECOKER1 !X =   253.647,  -1333.090,  0.91463, 11.37,  0.01000,  0.01000,
294.00000,  0.0,  0.0042327110!
VECOKER1 !SIGYZI = 0.,0.!
VECOKER1 !FMFAC = 1.! !END!
NSF1     !SRCNAM  = NSF1    !
NSF1     !X =   258.039,  -1332.324,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0041645881!
NSF1     !SIGYZI = 0.,0.!
NSF1     !FMFAC = 1.! !END!
VL82     !SRCNAM  = VL82    !
VL82     !X =   249.257,  -1333.072,  17.07317, 6.14,  0.91463,  0.00305,
298.55556,  0.0,  0.0040687457!
VL82     !SIGYZI = 0.,0.!
VL82     !FMFAC = 1.! !END!
VETKFMQP !SRCNAM  = VETKFMQP!
VETKFMQP !X =   252.631,  -1333.247,  0.91463, 8.56,  0.01000,  0.01000,
294.00000,  0.0,  0.0040082352!
VETKFMQP !SIGYZI = 0.,0.!
VETKFMQP !FMFAC = 1.! !END!
FEF61    !SRCNAM  = FEF61   !
FEF61    !X =   255.850,  -1333.769,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0047889708!
FEF61    !SIGYZI = 0.,0.!
FEF61    !FMFAC = 1.! !END!
VW11FHDS !SRCNAM  = VW11FHDS!
VW11FHDS !X =   249.773,  -1332.776,  4.57317, 6.59,  0.01000,  0.01000,
294.00000,  0.0,  0.0038829303!
VW11FHDS !SIGYZI = 0.,0.!
VW11FHDS !FMFAC = 1.! !END!
VETK94   !SRCNAM  = VETK94  !
VETK94   !X =   253.356,  -1333.504,  14.63415, 11.37,  0.91463,  0.00305,
295.22222,  0.0,  0.0038828988!
VETK94   !SIGYZI = 0.,0.!
VETK94   !FMFAC = 1.! !END!
VW12     !SRCNAM  = VW12    !
VW12     !X =   249.515,  -1332.502,  13.71951, 4.47,  0.91463,  0.00305,
298.00000,  0.0,  0.0038682515!
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VW12     !SIGYZI = 0.,0.!
VW12     !FMFAC = 1.! !END!
A1TB1VNT !SRCNAM  = A1TB1VNT!
A1TB1VNT !X =   252.646,  -1300.839,  7.31707, 15.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0053291554!
A1TB1VNT !SIGYZI = 0.,0.!
A1TB1VNT !FMFAC = 1.! !END!
FWFB3044 !SRCNAM  = FWFB3044!
FWFB3044 !X =   243.797,  -1330.526,  14.63415, 14.00,  0.91463,  0.00305,
310.28333,  0.0,  0.0037600193!
FWFB3044 !SIGYZI = 0.,0.!
FWFB3044 !FMFAC = 1.! !END!
VETK95   !SRCNAM  = VETK95  !
VETK95   !X =   253.409,  -1333.410,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0037455506!
VETK95   !SIGYZI = 0.,0.!
VETK95   !FMFAC = 1.! !END!
VETK73   !SRCNAM  = VETK73  !
VETK73   !X =   254.043,  -1333.390,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0037274909!
VETK73   !SIGYZI = 0.,0.!
VETK73   !FMFAC = 1.! !END!
IPFI1    !SRCNAM  = IPFI1   !
IPFI1    !X =   266.698,  -1327.108,  1.52439, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0037221885!
IPFI1    !SIGYZI = 0.,0.!
IPFI1    !FMFAC = 1.! !END!
FEE12TK2 !SRCNAM  = FEE12TK2!
FEE12TK2 !X =   256.406,  -1333.001,  12.80488, 7.00,  0.91463,  0.00305,
299.94444,  0.0,  0.0037149226!
FEE12TK2 !SIGYZI = 0.,0.!
FEE12TK2 !FMFAC = 1.! !END!
WTLD7    !SRCNAM  = WTLD7   !
WTLD7    !X =   255.227,  -1332.415,  0.91463, 6.64,  0.01000,  0.01000,
294.00000,  0.0,  0.0037104706!
WTLD7    !SIGYZI = 0.,0.!
WTLD7    !FMFAC = 1.! !END!
FBDEHY1  !SRCNAM  = FBDEHY1 !
FBDEHY1  !X =   270.343,  -1349.933,  3.65854, 4.00,  0.15244,  4.57317,
373.00000,  0.0,  0.0037064387!
FBDEHY1  !SIGYZI = 0.,0.!
FBDEHY1  !FMFAC = 1.! !END!
FWF51    !SRCNAM  = FWF51   !
FWF51    !X =   245.587,  -1331.345,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0036801891!
FWF51    !SIGYZI = 0.,0.!
FWF51    !FMFAC = 1.! !END!
VEPD4    !SRCNAM  = VEPD4   !
VEPD4    !X =   254.911,  -1332.051,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0035804933!
VEPD4    !SIGYZI = 0.,0.!
VEPD4    !FMFAC = 1.! !END!
CE774    !SRCNAM  = CE774   !
CE774    !X =   255.273,  -1333.849,  14.32927, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0035803463!
CE774    !SIGYZI = 0.,0.!
CE774    !FMFAC = 1.! !END!
FEFWW    !SRCNAM  = FEFWW   !
FEFWW    !X =   255.880,  -1333.829,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0035704660!
FEFWW    !SIGYZI = 0.,0.!
FEFWW    !FMFAC = 1.! !END!
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VL53     !SRCNAM  = VL53    !
VL53     !X =   248.867,  -1332.960,  17.07317, 5.25,  0.91463,  0.00305,
298.55556,  0.0,  0.0035324251!
VL53     !SIGYZI = 0.,0.!
VL53     !FMFAC = 1.! !END!
SH16     !SRCNAM  = SH16    !
SH16     !X =   241.949,  -1335.108,  23.78049, 18.00,  0.60976,  17.86585,
616.33333,  0.0,  0.0034701926!
SH16     !SIGYZI = 0.,0.!
SH16     !FMFAC = 1.! !END!
VWTRUCKF !SRCNAM  = VWTRUCKF!
VWTRUCKF !X =   249.335,  -1332.882,  0.91463, 5.55,  0.01000,  0.01000,
294.00000,  0.0,  0.0034375802!
VWTRUCKF !SIGYZI = 0.,0.!
VWTRUCKF !FMFAC = 1.! !END!
CE725    !SRCNAM  = CE725   !
CE725    !X =   255.650,  -1333.556,  14.32927, 8.86,  0.91463,  0.00305,
298.55556,  0.0,  0.0034105851!
CE725    !SIGYZI = 0.,0.!
CE725    !FMFAC = 1.! !END!
VW2F     !SRCNAM  = VW2F    !
VW2F     !X =   249.465,  -1332.660,  6.09756, 5.25,  0.01000,  0.01000,
294.00000,  0.0,  0.0033896590!
VW2F     !SIGYZI = 0.,0.!
VW2F     !FMFAC = 1.! !END!
TRTK303  !SRCNAM  = TRTK303 !
TRTK303  !X =   249.190,  -1332.669,  12.19512, 4.00,  0.91463,  0.00305,
335.77778,  0.0,  0.0033687643!
TRTK303  !SIGYZI = 0.,0.!
TRTK303  !FMFAC = 1.! !END!
FEE11TK5 !SRCNAM  = FEE11TK5!
FEE11TK5 !X =   255.666,  -1334.056,  9.14634, 9.00,  0.91463,  0.00305,
291.36667,  0.0,  0.0033568260!
FEE11TK5 !SIGYZI = 0.,0.!
FEE11TK5 !FMFAC = 1.! !END!
FEE18TK6 !SRCNAM  = FEE18TK6!
FEE18TK6 !X =   256.780,  -1333.488,  10.97561, 8.00,  0.91463,  0.00305,
298.50000,  0.0,  0.0033436277!
FEE18TK6 !SIGYZI = 0.,0.!
FEE18TK6 !FMFAC = 1.! !END!
VL81     !SRCNAM  = VL81    !
VL81     !X =   249.311,  -1333.009,  17.07317, 5.30,  0.91463,  0.00305,
298.55556,  0.0,  0.0033137242!
VL81     !SIGYZI = 0.,0.!
VL81     !FMFAC = 1.! !END!
FWFS4    !SRCNAM  = FWFS4   !
FWFS4    !X =   245.711,  -1330.874,  15.24390, 14.05,  3.35366,  8.23171,
308.00000,  0.0,  0.0032528462!
FWFS4    !SIGYZI = 0.,0.!
FWFS4    !FMFAC = 1.! !END!
FWFB4015 !SRCNAM  = FWFB4015!
FWFB4015 !X =   244.142,  -1330.984,  14.63415, 16.60,  0.91463,  0.00305,
298.63333,  0.0,  0.0031991396!
FWFB4015 !SIGYZI = 0.,0.!
FWFB4015 !FMFAC = 1.! !END!
CE638    !SRCNAM  = CE638   !
CE638    !X =   256.118,  -1333.510,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0031971971!
CE638    !SIGYZI = 0.,0.!
CE638    !FMFAC = 1.! !END!
CE639    !SRCNAM  = CE639   !
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CE639    !X =   256.063,  -1333.512,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0031971971!
CE639    !SIGYZI = 0.,0.!
CE639    !FMFAC = 1.! !END!
VEQREF2F !SRCNAM  = VEQREF2F!
VEQREF2F !X =   252.635,  -1333.371,  0.91463, 9.88,  0.01000,  0.01000,
294.00000,  0.0,  0.0031911912!
VEQREF2F !SIGYZI = 0.,0.!
VEQREF2F !FMFAC = 1.! !END!
VETK331  !SRCNAM  = VETK331 !
VETK331  !X =   252.576,  -1333.249,  14.63415, 8.56,  0.91463,  0.00305,
295.22222,  0.0,  0.0030510081!
VETK331  !SIGYZI = 0.,0.!
VETK331  !FMFAC = 1.! !END!
VEQSULFO !SRCNAM  = VEQSULFO!
VEQSULFO !X =   252.524,  -1333.343,  6.09756, 9.55,  0.01000,  0.01000,
294.00000,  0.0,  0.0030510081!
VEQSULFO !SIGYZI = 0.,0.!
VEQSULFO !FMFAC = 1.! !END!
CD9834   !SRCNAM  = CD9834  !
CD9834   !X =   254.093,  -1334.074,  1.82927, 12.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0029616965!
CD9834   !SIGYZI = 0.,0.!
CD9834   !FMFAC = 1.! !END!
VETK50   !SRCNAM  = VETK50  !
VETK50   !X =   254.237,  -1333.384,  12.80488, 11.77,  0.91463,  0.00305,
295.22222,  0.0,  0.0029611190!
VETK50   !SIGYZI = 0.,0.!
VETK50   !FMFAC = 1.! !END!
VL54     !SRCNAM  = VL54    !
VL54     !X =   248.925,  -1333.021,  17.07317, 5.92,  0.91463,  0.00305,
298.55556,  0.0,  0.0029425553!
VL54     !SIGYZI = 0.,0.!
VL54     !FMFAC = 1.! !END!
VETK357  !SRCNAM  = VETK357 !
VETK357  !X =   252.520,  -1333.219,  14.63415, 8.23,  0.91463,  0.00305,
295.22222,  0.0,  0.0029418939!
VETK357  !SIGYZI = 0.,0.!
VETK357  !FMFAC = 1.! !END!
FWFB109R !SRCNAM  = FWFB109R!
FWFB109R !X =   245.827,  -1330.152,  15.24390, 5.59,  0.91463,  0.00305,
298.00000,  0.0,  0.0029340190!
FWFB109R !SIGYZI = 0.,0.!
FWFB109R !FMFAC = 1.! !END!
CE727    !SRCNAM  = CE727   !
CE727    !X =   255.653,  -1333.650,  6.09756, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0028471119!
CE727    !SIGYZI = 0.,0.!
CE727    !FMFAC = 1.! !END!
FWW8     !SRCNAM  = FWW8    !
FWW8     !X =   245.931,  -1329.961,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0028360241!
FWW8     !SIGYZI = 0.,0.!
FWW8     !FMFAC = 1.! !END!
FWFB508  !SRCNAM  = FWFB508 !
FWFB508  !X =   245.166,  -1331.078,  12.19512, 15.00,  0.91463,  0.00305,
295.99444,  0.0,  0.0028345751!
FWFB508  !SIGYZI = 0.,0.!
FWFB508  !FMFAC = 1.! !END!
CE733    !SRCNAM  = CE733   !
CE733    !X =   255.184,  -1332.792,  14.63415, 7.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0027946548!
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CE733    !SIGYZI = 0.,0.!
CE733    !FMFAC = 1.! !END!
VETK92   !SRCNAM  = VETK92  !
VETK92   !X =   253.927,  -1333.174,  14.93902, 11.69,  0.91463,  0.00305,
295.22222,  0.0,  0.0027864649!
VETK92   !SIGYZI = 0.,0.!
VETK92   !FMFAC = 1.! !END!
FWFB4010 !SRCNAM  = FWFB4010!
FWFB4010 !X =   244.028,  -1330.894,  15.54878, 15.61,  0.91463,  0.00305,
300.80556,  0.0,  0.0027783171!
FWFB4010 !SIGYZI = 0.,0.!
FWFB4010 !FMFAC = 1.! !END!
CE446    !SRCNAM  = CE446   !
CE446    !X =   255.902,  -1332.800,  76.21951, 1.50,  0.10000,  0.01000,
810.77778,  0.0,  0.0027513955!
CE446    !SIGYZI = 0.,0.!
CE446    !FMFAC = 1.! !END!
FTTK2807 !SRCNAM  = FTTK2807!
FTTK2807 !X =   278.282,  -1330.924,  17.07317, 4.00,  0.60976,  0.00305,
295.22222,  0.0,  0.0027471746!
FTTK2807 !SIGYZI = 0.,0.!
FTTK2807 !FMFAC = 1.! !END!
FTTK280A !SRCNAM  = FTTK280A!
FTTK280A !X =   278.496,  -1330.729,  16.76829, 5.03,  0.91463,  0.00305,
298.00000,  0.0,  0.0027449906!
FTTK280A !SIGYZI = 0.,0.!
FTTK280A !FMFAC = 1.! !END!
FEF30    !SRCNAM  = FEF30   !
FEF30    !X =   256.745,  -1333.271,  0.91463, 7.19,  0.01000,  0.01000,
294.00000,  0.0,  0.0027210300!
FEF30    !SIGYZI = 0.,0.!
FEF30    !FMFAC = 1.! !END!
FWLSGFUG !SRCNAM  = FWLSGFUG!
FWLSGFUG !X =   244.890,  -1331.086,  0.91463, 14.97,  0.01000,  0.01000,
294.00000,  0.0,  0.0026989804!
FWLSGFUG !SIGYZI = 0.,0.!
FWLSGFUG !FMFAC = 1.! !END!
FWFB505  !SRCNAM  = FWFB505 !
FWFB505  !X =   245.188,  -1330.952,  17.07317, 15.00,  0.91463,  0.00305,
295.38889,  0.0,  0.0026734343!
FWFB505  !SIGYZI = 0.,0.!
FWFB505  !FMFAC = 1.! !END!
FW15FB52 !SRCNAM  = FW15FB52!
FW15FB52 !X =   245.349,  -1330.792,  14.63415, 14.96,  0.91463,  0.00305,
306.07222,  0.0,  0.0026730668!
FW15FB52 !SIGYZI = 0.,0.!
FW15FB52 !FMFAC = 1.! !END!
VETK350  !SRCNAM  = VETK350 !
VETK350  !X =   252.408,  -1333.193,  14.32927, 7.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0026693289!
VETK350  !SIGYZI = 0.,0.!
VETK350  !FMFAC = 1.! !END!
FWFB4011 !SRCNAM  = FWFB4011!
FWFB4011 !X =   243.999,  -1330.864,  15.54878, 15.28,  0.91463,  0.00305,
299.21111,  0.0,  0.0026582620!
FWFB4011 !SIGYZI = 0.,0.!
FWFB4011 !FMFAC = 1.! !END!
FTTK280C !SRCNAM  = FTTK280C!
FTTK280C !X =   278.307,  -1330.828,  17.07317, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0026564036!
FTTK280C !SIGYZI = 0.,0.!
FTTK280C !FMFAC = 1.! !END!
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VETK72   !SRCNAM  = VETK72  !
VETK72   !X =   254.069,  -1333.326,  14.93902, 11.88,  0.91463,  0.00305,
295.22222,  0.0,  0.0026481717!
VETK72   !SIGYZI = 0.,0.!
VETK72   !FMFAC = 1.! !END!
VEGOT1FE !SRCNAM  = VEGOT1FE!
VEGOT1FE !X =   253.708,  -1333.275,  0.91463, 11.22,  0.01000,  0.01000,
294.00000,  0.0,  0.0026302590!
VEGOT1FE !SIGYZI = 0.,0.!
VEGOT1FE !FMFAC = 1.! !END!
FWF42    !SRCNAM  = FWF42   !
FWF42    !X =   244.831,  -1330.994,  0.91463, 14.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0026286315!
FWF42    !SIGYZI = 0.,0.!
FWF42    !FMFAC = 1.! !END!
FWFB110R !SRCNAM  = FWFB110R!
FWFB110R !X =   245.830,  -1330.246,  18.29268, 7.30,  0.91463,  0.00305,
296.48889,  0.0,  0.0026128713!
FWFB110R !SIGYZI = 0.,0.!
FWFB110R !FMFAC = 1.! !END!
VL52     !SRCNAM  = VL52    !
VL52     !X =   248.923,  -1332.958,  17.07317, 5.24,  0.91463,  0.00305,
298.55556,  0.0,  0.0026089339!
VL52     !SIGYZI = 0.,0.!
VL52     !FMFAC = 1.! !END!
VEREF4FE !SRCNAM  = VEREF4FE!
VEREF4FE !X =   253.651,  -1333.215,  0.91463, 11.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0025557732!
VEREF4FE !SIGYZI = 0.,0.!
VEREF4FE !FMFAC = 1.! !END!
VETK204  !SRCNAM  = VETK204 !
VETK204  !X =   254.627,  -1332.653,  14.63415, 7.89,  0.91463,  0.00305,
295.22222,  0.0,  0.0025373565!
VETK204  !SIGYZI = 0.,0.!
VETK204  !FMFAC = 1.! !END!
FWFB161  !SRCNAM  = FWFB161 !
FWFB161  !X =   245.151,  -1330.610,  14.63415, 14.01,  0.91463,  0.00305,
297.08333,  0.0,  0.0024926483!
FWFB161  !SIGYZI = 0.,0.!
FWFB161  !FMFAC = 1.! !END!
CEF061   !SRCNAM  = CEF061  !
CEF061   !X =   255.700,  -1333.398,  6.09756, 8.69,  0.01000,  0.01000,
294.00000,  0.0,  0.0024868209!
CEF061   !SIGYZI = 0.,0.!
CEF061   !FMFAC = 1.! !END!
CE736    !SRCNAM  = CE736   !
CE736    !X =   255.256,  -1333.319,  17.68293, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0024299328!
CE736    !SIGYZI = 0.,0.!
CE736    !FMFAC = 1.! !END!
FTTK2808 !SRCNAM  = FTTK2808!
FTTK2808 !X =   278.332,  -1330.734,  17.07317, 5.01,  0.91463,  0.00305,
298.00000,  0.0,  0.0024251764!
FTTK2808 !SIGYZI = 0.,0.!
FTTK2808 !FMFAC = 1.! !END!
VETK15   !SRCNAM  = VETK15  !
VETK15   !X =   254.072,  -1333.389,  12.19512, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0024197585!
VETK15   !SIGYZI = 0.,0.!
VETK15   !FMFAC = 1.! !END!
VEHCUFE  !SRCNAM  = VEHCUFE !
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VEHCUFE  !X =   252.718,  -1333.400,  0.91463, 10.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0023490737!
VEHCUFE  !SIGYZI = 0.,0.!
VEHCUFE  !FMFAC = 1.! !END!
WT141    !SRCNAM  = WT141   !
WT141    !X =   254.685,  -1333.587,  17.07317, 11.89,  0.91463,  0.00305,
310.77778,  0.0,  0.0023425533!
WT141    !SIGYZI = 0.,0.!
WT141    !FMFAC = 1.! !END!
FTTK2805 !SRCNAM  = FTTK2805!
FTTK2805 !X =   278.167,  -1330.771,  14.63415, 5.34,  0.91463,  0.00305,
298.00000,  0.0,  0.0023203041!
FTTK2805 !SIGYZI = 0.,0.!
FTTK2805 !FMFAC = 1.! !END!
FTTK2801 !SRCNAM  = FTTK2801!
FTTK2801 !X =   277.851,  -1331.220,  14.63415, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0023193067!
FTTK2801 !SIGYZI = 0.,0.!
FTTK2801 !FMFAC = 1.! !END!
SH17     !SRCNAM  = SH17    !
SH17     !X =   241.949,  -1335.108,  23.78049, 18.00,  0.60976,  17.86585,
616.33333,  0.0,  0.0023099618!
SH17     !SIGYZI = 0.,0.!
SH17     !FMFAC = 1.! !END!
FTTK2802 !SRCNAM  = FTTK2802!
FTTK2802 !X =   277.934,  -1331.218,  14.63415, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0023013519!
FTTK2802 !SIGYZI = 0.,0.!
FTTK2802 !FMFAC = 1.! !END!
CE859    !SRCNAM  = CE859   !
CE859    !X =   249.769,  -1333.557,  14.63415, 13.39,  0.91463,  0.00305,
298.55556,  0.0,  0.0022975825!
CE859    !SIGYZI = 0.,0.!
CE859    !FMFAC = 1.! !END!
VETK370  !SRCNAM  = VETK370 !
VETK370  !X =   252.799,  -1333.304,  14.63415, 9.22,  0.91463,  0.00305,
295.22222,  0.0,  0.0022924166!
VETK370  !SIGYZI = 0.,0.!
VETK370  !FMFAC = 1.! !END!
WTLD11   !SRCNAM  = WTLD11  !
WTLD11   !X =   255.201,  -1332.479,  0.91463, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0022903271!
WTLD11   !SIGYZI = 0.,0.!
WTLD11   !FMFAC = 1.! !END!
VL56     !SRCNAM  = VL56    !
VL56     !X =   249.481,  -1332.286,  16.46341, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0022837647!
VL56     !SIGYZI = 0.,0.!
VL56     !FMFAC = 1.! !END!
FWF30    !SRCNAM  = FWF30   !
FWF30    !X =   245.643,  -1331.343,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0021997136!
FWF30    !SIGYZI = 0.,0.!
FWF30    !FMFAC = 1.! !END!
CEL571   !SRCNAM  = CEL571  !
CEL571   !X =   256.150,  -1332.792,  6.09756, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0021346777!
CEL571   !SIGYZI = 0.,0.!
CEL571   !FMFAC = 1.! !END!
EQEF2113 !SRCNAM  = EQEF2113!
EQEF2113 !X =   239.055,  -1333.479,  6.09756, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0021314648!
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EQEF2113 !SIGYZI = 0.,0.!
EQEF2113 !FMFAC = 1.! !END!
FTTK2800 !SRCNAM  = FTTK2800!
FTTK2800 !X =   278.480,  -1331.041,  16.76829, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0021140875!
FTTK2800 !SIGYZI = 0.,0.!
FTTK2800 !FMFAC = 1.! !END!
CE675    !SRCNAM  = CE675   !
CE675    !X =   255.808,  -1333.301,  10.67073, 8.39,  0.91463,  0.00305,
298.55556,  0.0,  0.0021060762!
CE675    !SIGYZI = 0.,0.!
CE675    !FMFAC = 1.! !END!
VETK100  !SRCNAM  = VETK100 !
VETK100  !X =   253.249,  -1333.571,  14.63415, 11.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0021016977!
VETK100  !SIGYZI = 0.,0.!
VETK100  !FMFAC = 1.! !END!
VETK99   !SRCNAM  = VETK99  !
VETK99   !X =   253.361,  -1333.661,  14.63415, 11.22,  0.91463,  0.00305,
295.22222,  0.0,  0.0020987893!
VETK99   !SIGYZI = 0.,0.!
VETK99   !FMFAC = 1.! !END!
CE857    !SRCNAM  = CE857   !
CE857    !X =   249.867,  -1333.146,  14.63415, 9.56,  0.91463,  0.00305,
298.55556,  0.0,  0.0020931614!
CE857    !SIGYZI = 0.,0.!
CE857    !FMFAC = 1.! !END!
FW15FB51 !SRCNAM  = FW15FB51!
FW15FB51 !X =   245.461,  -1330.819,  14.63415, 14.66,  0.91463,  0.00305,
298.06667,  0.0,  0.0020864940!
FW15FB51 !SIGYZI = 0.,0.!
FW15FB51 !FMFAC = 1.! !END!
VW49F    !SRCNAM  = VW49F   !
VW49F    !X =   249.777,  -1332.932,  7.62195, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0020779156!
VW49F    !SIGYZI = 0.,0.!
VW49F    !FMFAC = 1.! !END!
VETK203  !SRCNAM  = VETK203 !
VETK203  !X =   254.601,  -1332.715,  14.63415, 8.47,  0.91463,  0.00305,
295.22222,  0.0,  0.0020550365!
VETK203  !SIGYZI = 0.,0.!
VETK203  !FMFAC = 1.! !END!
EQ33     !SRCNAM  = EQ33    !
EQ33     !X =   239.054,  -1333.449,  7.31707, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0020474661!
EQ33     !SIGYZI = 0.,0.!
EQ33     !FMFAC = 1.! !END!
FTTK280B !SRCNAM  = FTTK280B!
FTTK280B !X =   278.216,  -1330.614,  14.63415, 6.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0020402528!
FTTK280B !SIGYZI = 0.,0.!
FTTK280B !FMFAC = 1.! !END!
CE672    !SRCNAM  = CE672   !
CE672    !X =   255.779,  -1333.271,  10.67073, 8.13,  0.91463,  0.00305,
298.55556,  0.0,  0.0020051518!
CE672    !SIGYZI = 0.,0.!
CE672    !FMFAC = 1.! !END!
FBCST1   !SRCNAM  = FBCST1  !
FBCST1   !X =   270.345,  -1349.996,  9.14634, 4.00,  0.91463,  0.00305,
293.00000,  0.0,  0.0019970670!
FBCST1   !SIGYZI = 0.,0.!
FBCST1   !FMFAC = 1.! !END!
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FWF22    !SRCNAM  = FWF22   !
FWF22    !X =   245.472,  -1331.162,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0019907671!
FWF22    !SIGYZI = 0.,0.!
FWF22    !FMFAC = 1.! !END!
CE858    !SRCNAM  = CE858   !
CE858    !X =   249.846,  -1333.367,  14.63415, 11.39,  0.91463,  0.00305,
299.66667,  0.0,  0.0019866932!
CE858    !SIGYZI = 0.,0.!
CE858    !FMFAC = 1.! !END!
CE706    !SRCNAM  = CE706   !
CE706    !X =   255.636,  -1333.119,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0019797213!
CE706    !SIGYZI = 0.,0.!
CE706    !FMFAC = 1.! !END!
VEQNAPSP !SRCNAM  = VEQNAPSP!
VEQNAPSP !X =   252.552,  -1333.374,  0.91463, 9.89,  0.01000,  0.01000,
294.00000,  0.0,  0.0019778628!
VEQNAPSP !SIGYZI = 0.,0.!
VEQNAPSP !FMFAC = 1.! !END!
FT28071  !SRCNAM  = FT28071 !
FT28071  !X =   278.230,  -1331.019,  17.07317, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0019754793!
FT28071  !SIGYZI = 0.,0.!
FT28071  !FMFAC = 1.! !END!
GRE7A    !SRCNAM  = GRE7A   !
GRE7A    !X =   271.577,  -1318.112,  8.84146, 6.00,  0.60976,  10.12500,
689.11111,  0.0,  0.0019646015!
GRE7A    !SIGYZI = 0.,0.!
GRE7A    !FMFAC = 1.! !END!
FW62FB21 !SRCNAM  = FW62FB21!
FW62FB21 !X =   246.330,  -1330.354,  6.70732, 4.00,  0.91463,  0.00305,
298.72222,  0.0,  0.0019502168!
FW62FB21 !SIGYZI = 0.,0.!
FW62FB21 !FMFAC = 1.! !END!
EQ30A    !SRCNAM  = EQ30A   !
EQ30A    !X =   239.831,  -1333.550,  14.63415, 19.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0019450928!
EQ30A    !SIGYZI = 0.,0.!
EQ30A    !FMFAC = 1.! !END!
EQ30B    !SRCNAM  = EQ30B   !
EQ30B    !X =   239.833,  -1333.644,  14.63415, 19.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0019450928!
EQ30B    !SIGYZI = 0.,0.!
EQ30B    !FMFAC = 1.! !END!
FWFB137  !SRCNAM  = FWFB137 !
FWFB137  !X =   245.615,  -1330.439,  12.19512, 12.83,  0.91463,  0.00305,
294.67778,  0.0,  0.0019067895!
FWFB137  !SIGYZI = 0.,0.!
FWFB137  !FMFAC = 1.! !END!
FWFB141  !SRCNAM  = FWFB141 !
FWFB141  !X =   245.550,  -1330.129,  15.85366, 7.88,  0.91463,  0.00305,
318.22222,  0.0,  0.0018507834!
FWFB141  !SIGYZI = 0.,0.!
FWFB141  !FMFAC = 1.! !END!
EQ30C    !SRCNAM  = EQ30C   !
EQ30C    !X =   239.836,  -1333.736,  14.63415, 19.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0018427195!
EQ30C    !SIGYZI = 0.,0.!
EQ30C    !FMFAC = 1.! !END!
VETK98   !SRCNAM  = VETK98  !
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VETK98   !X =   253.475,  -1333.750,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0018197879!
VETK98   !SIGYZI = 0.,0.!
VETK98   !FMFAC = 1.! !END!
VESWS1FE !SRCNAM  = VESWS1FE!
VESWS1FE !X =   253.594,  -1333.155,  0.91463, 11.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0018142125!
VESWS1FE !SIGYZI = 0.,0.!
VESWS1FE !FMFAC = 1.! !END!
FWFB401  !SRCNAM  = FWFB401 !
FWFB401  !X =   253.997,  -1333.672,  12.80488, 12.00,  0.91463,  0.00305,
299.34444,  0.0,  0.0018141495!
FWFB401  !SIGYZI = 0.,0.!
FWFB401  !FMFAC = 1.! !END!
FTTK2809 !SRCNAM  = FTTK2809!
FTTK2809 !X =   278.445,  -1330.823,  17.07317, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0017971188!
FTTK2809 !SIGYZI = 0.,0.!
FTTK2809 !FMFAC = 1.! !END!
CE856    !SRCNAM  = CE856   !
CE856    !X =   249.684,  -1333.464,  14.63415, 11.43,  0.91463,  0.00305,
298.55556,  0.0,  0.0017780196!
CE856    !SIGYZI = 0.,0.!
CE856    !FMFAC = 1.! !END!
FWFB4012 !SRCNAM  = FWFB4012!
FWFB4012 !X =   243.976,  -1330.989,  15.54878, 16.29,  0.91463,  0.00305,
301.93333,  0.0,  0.0017741347!
FWFB4012 !SIGYZI = 0.,0.!
FWFB4012 !FMFAC = 1.! !END!
VETK110  !SRCNAM  = VETK110 !
VETK110  !X =   253.107,  -1333.451,  14.63415, 10.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0017725387!
VETK110  !SIGYZI = 0.,0.!
VETK110  !FMFAC = 1.! !END!
VETK97   !SRCNAM  = VETK97  !
VETK97   !X =   253.471,  -1333.626,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0017702392!
VETK97   !SIGYZI = 0.,0.!
VETK97   !FMFAC = 1.! !END!
VETK371  !SRCNAM  = VETK371 !
VETK371  !X =   252.853,  -1333.303,  14.63415, 9.23,  0.91463,  0.00305,
295.22222,  0.0,  0.0017537125!
VETK371  !SIGYZI = 0.,0.!
VETK371  !FMFAC = 1.! !END!
FWF40    !SRCNAM  = FWF40   !
FWF40    !X =   243.999,  -1330.833,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0017497961!
FWF40    !SIGYZI = 0.,0.!
FWF40    !FMFAC = 1.! !END!
FWF32    !SRCNAM  = FWF32   !
FWF32    !X =   245.807,  -1331.276,  0.91463, 13.88,  0.01000,  0.01000,
294.00000,  0.0,  0.0017455961!
FWF32    !SIGYZI = 0.,0.!
FWF32    !FMFAC = 1.! !END!
FWFB408  !SRCNAM  = FWFB408 !
FWFB408  !X =   253.945,  -1333.735,  12.19512, 12.00,  0.91463,  0.00305,
298.03889,  0.0,  0.0016983784!
FWFB408  !SIGYZI = 0.,0.!
FWFB408  !FMFAC = 1.! !END!
FWFB507  !SRCNAM  = FWFB507 !
FWFB507  !X =   245.276,  -1331.074,  12.19512, 15.00,  0.91463,  0.00305,
296.55556,  0.0,  0.0016850646!
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FWFB507  !SIGYZI = 0.,0.!
FWFB507  !FMFAC = 1.! !END!
FTTK2803 !SRCNAM  = FTTK2803!
FTTK2803 !X =   278.066,  -1331.056,  14.63415, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0016791427!
FTTK2803 !SIGYZI = 0.,0.!
FTTK2803 !FMFAC = 1.! !END!
TRTK306  !SRCNAM  = TRTK306 !
TRTK306  !X =   249.268,  -1332.510,  16.46341, 4.00,  0.91463,  0.00305,
308.00000,  0.0,  0.0016687164!
TRTK306  !SIGYZI = 0.,0.!
TRTK306  !FMFAC = 1.! !END!
FTTK2806 !SRCNAM  = FTTK2806!
FTTK2806 !X =   278.207,  -1331.145,  14.63415, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0016601905!
FTTK2806 !SIGYZI = 0.,0.!
FTTK2806 !FMFAC = 1.! !END!
FEE11TK1 !SRCNAM  = FEE11TK1!
FEE11TK1 !X =   255.442,  -1333.938,  9.45122, 9.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0016420783!
FEE11TK1 !SIGYZI = 0.,0.!
FEE11TK1 !FMFAC = 1.! !END!
CE692    !SRCNAM  = CE692   !
CE692    !X =   255.668,  -1333.243,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0016319460!
CE692    !SIGYZI = 0.,0.!
CE692    !FMFAC = 1.! !END!
FWFB506R !SRCNAM  = FWFB506R!
FWFB506R !X =   245.327,  -1330.947,  12.19512, 15.00,  0.91463,  0.00305,
352.15000,  0.0,  0.0015961836!
FWFB506R !SIGYZI = 0.,0.!
FWFB506R !FMFAC = 1.! !END!
CE728    !SRCNAM  = CE728   !
CE728    !X =   255.709,  -1333.678,  6.09756, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0015910597!
CE728    !SIGYZI = 0.,0.!
CE728    !FMFAC = 1.! !END!
CE853    !SRCNAM  = CE853   !
CE853    !X =   249.514,  -1333.346,  14.63415, 9.78,  0.91463,  0.00305,
298.55556,  0.0,  0.0015906397!
CE853    !SIGYZI = 0.,0.!
CE853    !FMFAC = 1.! !END!
WT133    !SRCNAM  = WT133   !
WT133    !X =   254.662,  -1333.743,  12.80488, 12.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0015729580!
WT133    !SIGYZI = 0.,0.!
WT133    !FMFAC = 1.! !END!
TRTK5001 !SRCNAM  = TRTK5001!
TRTK5001 !X =   249.510,  -1333.189,  14.63415, 8.90,  0.91463,  0.00305,
317.44444,  0.0,  0.0015501209!
TRTK5001 !SIGYZI = 0.,0.!
TRTK5001 !FMFAC = 1.! !END!
VETK91   !SRCNAM  = VETK91  !
VETK91   !X =   253.902,  -1333.269,  14.93902, 11.62,  0.91463,  0.00305,
295.22222,  0.0,  0.0015379726!
VETK91   !SIGYZI = 0.,0.!
VETK91   !FMFAC = 1.! !END!
VL86     !SRCNAM  = VL86    !
VL86     !X =   249.386,  -1332.788,  15.24390, 5.37,  0.91463,  0.00305,
298.55556,  0.0,  0.0015162799!
VL86     !SIGYZI = 0.,0.!
VL86     !FMFAC = 1.! !END!
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CE705    !SRCNAM  = CE705   !
CE705    !X =   255.745,  -1333.086,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0014851689!
CE705    !SIGYZI = 0.,0.!
CE705    !FMFAC = 1.! !END!
FEE12TK4 !SRCNAM  = FEE12TK4!
FEE12TK4 !X =   256.462,  -1333.063,  14.63415, 7.00,  0.91463,  0.00305,
301.08889,  0.0,  0.0014821240!
FEE12TK4 !SIGYZI = 0.,0.!
FEE12TK4 !FMFAC = 1.! !END!
FWFGB    !SRCNAM  = FWFGB   !
FWFGB    !X =   245.871,  -1330.682,  0.91463, 14.94,  0.01000,  0.01000,
294.00000,  0.0,  0.0014783756!
FWFGB    !SIGYZI = 0.,0.!
FWFGB    !FMFAC = 1.! !END!
CE768    !SRCNAM  = CE768   !
CE768    !X =   255.355,  -1333.815,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0014701962!
CE768    !SIGYZI = 0.,0.!
CE768    !FMFAC = 1.! !END!
CE854    !SRCNAM  = CE854   !
CE854    !X =   249.702,  -1333.151,  14.63415, 9.46,  0.91463,  0.00305,
298.55556,  0.0,  0.0014671302!
CE854    !SIGYZI = 0.,0.!
CE854    !FMFAC = 1.! !END!
FWFB4013 !SRCNAM  = FWFB4013!
FWFB4013 !X =   244.031,  -1330.987,  15.54878, 16.60,  0.91463,  0.00305,
305.07222,  0.0,  0.0014649673!
FWFB4013 !SIGYZI = 0.,0.!
FWFB4013 !FMFAC = 1.! !END!
FEE11TKE !SRCNAM  = FEE11TKE!
FEE11TKE !X =   255.555,  -1334.027,  14.63415, 9.00,  0.91463,  0.00305,
298.70000,  0.0,  0.0014577959!
FEE11TKE !SIGYZI = 0.,0.!
FEE11TKE !FMFAC = 1.! !END!
FWFB145  !SRCNAM  = FWFB145 !
FWFB145  !X =   245.284,  -1330.450,  14.63415, 14.51,  0.91463,  0.00305,
378.28333,  0.0,  0.0014518425!
FWFB145  !SIGYZI = 0.,0.!
FWFB145  !FMFAC = 1.! !END!
FEF98    !SRCNAM  = FEF98   !
FEF98    !X =   255.853,  -1333.862,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0014474011!
FEF98    !SIGYZI = 0.,0.!
FEF98    !FMFAC = 1.! !END!
TRTK304  !SRCNAM  = TRTK304 !
TRTK304  !X =   249.241,  -1332.543,  16.46341, 4.00,  0.91463,  0.00305,
352.44444,  0.0,  0.0014438731!
TRTK304  !SIGYZI = 0.,0.!
TRTK304  !FMFAC = 1.! !END!
VW96     !SRCNAM  = VW96    !
VW96     !X =   249.404,  -1332.444,  12.80488, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0014437471!
VW96     !SIGYZI = 0.,0.!
VW96     !FMFAC = 1.! !END!
FEE11TK3 !SRCNAM  = FEE11TK3!
FEE11TK3 !X =   255.665,  -1334.024,  9.14634, 9.00,  0.91463,  0.00305,
302.13889,  0.0,  0.0014178756!
FEE11TK3 !SIGYZI = 0.,0.!
FEE11TK3 !FMFAC = 1.! !END!
CE643    !SRCNAM  = CE643   !
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CE643    !X =   256.084,  -1333.324,  14.63415, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0014002463!
CE643    !SIGYZI = 0.,0.!
CE643    !FMFAC = 1.! !END!
VETK102  !SRCNAM  = VETK102 !
VETK102  !X =   254.359,  -1332.879,  9.75610, 9.21,  0.91463,  0.00305,
295.22222,  0.0,  0.0013922245!
VETK102  !SIGYZI = 0.,0.!
VETK102  !FMFAC = 1.! !END!
CE644    !SRCNAM  = CE644   !
CE644    !X =   256.197,  -1333.414,  14.63415, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0013893370!
CE644    !SIGYZI = 0.,0.!
CE644    !FMFAC = 1.! !END!
CE704    !SRCNAM  = CE704   !
CE704    !X =   255.662,  -1333.057,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0013820711!
CE704    !SIGYZI = 0.,0.!
CE704    !FMFAC = 1.! !END!
FWFB504  !SRCNAM  = FWFB504 !
FWFB504  !X =   245.212,  -1330.795,  17.07317, 14.49,  0.91463,  0.00305,
297.61667,  0.0,  0.0013677074!
FWFB504  !SIGYZI = 0.,0.!
FWFB504  !FMFAC = 1.! !END!
VETK93   !SRCNAM  = VETK93  !
VETK93   !X =   253.520,  -1333.438,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0013533961!
VETK93   !SIGYZI = 0.,0.!
VETK93   !FMFAC = 1.! !END!
FWFB134  !SRCNAM  = FWFB134 !
FWFB134  !X =   245.508,  -1330.537,  12.19512, 14.91,  0.91463,  0.00305,
293.15556,  0.0,  0.0013443558!
FWFB134  !SIGYZI = 0.,0.!
FWFB134  !FMFAC = 1.! !END!
VWENG730 !SRCNAM  = VWENG730!
VWENG730 !X =   249.031,  -1332.892,  12.19512, 4.58,  0.38110,  16.03659,
644.11111,  0.0,  0.0013420773!
VWENG730 !SIGYZI = 0.,0.!
VWENG730 !FMFAC = 1.! !END!
VW6      !SRCNAM  = VW6     !
VW6      !X =   249.490,  -1332.567,  12.19512, 4.62,  0.91463,  0.00305,
298.55556,  0.0,  0.0013400718!
VW6      !SIGYZI = 0.,0.!
VW6      !FMFAC = 1.! !END!
SH5      !SRCNAM  = SH5     !
SH5      !X =   241.973,  -1335.015,  25.00000, 18.00,  0.12195,  3.29268,
616.33333,  0.0,  0.0013384129!
SH5      !SIGYZI = 0.,0.!
SH5      !FMFAC = 1.! !END!
VEDOCK11 !SRCNAM  = VEDOCK11!
VEDOCK11 !X =   254.409,  -1331.878,  4.57317, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0013261281!
VEDOCK11 !SIGYZI = 0.,0.!
VEDOCK11 !FMFAC = 1.! !END!
TRTK302  !SRCNAM  = TRTK302 !
TRTK302  !X =   249.242,  -1332.575,  13.10976, 4.00,  0.91463,  0.00305,
327.44444,  0.0,  0.0013205317!
TRTK302  !SIGYZI = 0.,0.!
TRTK302  !FMFAC = 1.! !END!
VL87     !SRCNAM  = VL87    !
VL87     !X =   249.360,  -1332.820,  15.24390, 5.50,  0.91463,  0.00305,
298.55556,  0.0,  0.0013196707!
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VL87     !SIGYZI = 0.,0.!
VL87     !FMFAC = 1.! !END!
FW10FA13 !SRCNAM  = FW10FA13!
FW10FA13 !X =   245.761,  -1330.685,  7.31707, 14.10,  0.91463,  0.00305,
321.88889,  0.0,  0.0013169407!
FW10FA13 !SIGYZI = 0.,0.!
FW10FA13 !FMFAC = 1.! !END!
FEE11TKJ !SRCNAM  = FEE11TKJ!
FEE11TKJ !X =   255.631,  -1333.837,  14.63415, 9.00,  0.91463,  0.00305,
306.44444,  0.0,  0.0013003405!
FEE11TKJ !SIGYZI = 0.,0.!
FEE11TKJ !FMFAC = 1.! !END!
CE521    !SRCNAM  = CE521   !
CE521    !X =   255.263,  -1333.538,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0012957311!
CE521    !SIGYZI = 0.,0.!
CE521    !FMFAC = 1.! !END!
VETK147  !SRCNAM  = VETK147 !
VETK147  !X =   254.519,  -1332.718,  12.19512, 8.93,  0.91463,  0.00305,
295.22222,  0.0,  0.0012726105!
VETK147  !SIGYZI = 0.,0.!
VETK147  !FMFAC = 1.! !END!
VETK96   !SRCNAM  = VETK96  !
VETK96   !X =   253.523,  -1333.530,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0012514218!
VETK96   !SIGYZI = 0.,0.!
VETK96   !FMFAC = 1.! !END!
VW157    !SRCNAM  = VW157   !
VW157    !X =   249.328,  -1332.665,  6.09756, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0012448594!
VW157    !SIGYZI = 0.,0.!
VW157    !FMFAC = 1.! !END!
WT130    !SRCNAM  = WT130   !
WT130    !X =   254.280,  -1333.880,  14.63415, 12.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0012416150!
WT130    !SIGYZI = 0.,0.!
WT130    !FMFAC = 1.! !END!
VESWS2FE !SRCNAM  = VESWS2FE!
VESWS2FE !X =   253.567,  -1333.156,  0.91463, 11.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0012195548!
VESWS2FE !SIGYZI = 0.,0.!
VESWS2FE !FMFAC = 1.! !END!
FW45FB73 !SRCNAM  = FW45FB73!
FW45FB73 !X =   244.763,  -1330.560,  7.31707, 12.58,  0.91463,  0.00305,
303.54444,  0.0,  0.0012192713!
FW45FB73 !SIGYZI = 0.,0.!
FW45FB73 !FMFAC = 1.! !END!
TRTK301  !SRCNAM  = TRTK301 !
TRTK301  !X =   249.215,  -1332.637,  13.10976, 4.00,  0.91463,  0.00305,
327.44444,  0.0,  0.0012191978!
TRTK301  !SIGYZI = 0.,0.!
TRTK301  !FMFAC = 1.! !END!
WTLD3    !SRCNAM  = WTLD3   !
WTLD3    !X =   255.228,  -1332.446,  0.91463, 6.91,  0.01000,  0.01000,
294.00000,  0.0,  0.0011999832!
WTLD3    !SIGYZI = 0.,0.!
WTLD3    !FMFAC = 1.! !END!
SH4      !SRCNAM  = SH4     !
SH4      !X =   241.973,  -1335.015,  25.00000, 18.00,  1.21951,  3.29268,
616.33333,  0.0,  0.0011958462!
SH4      !SIGYZI = 0.,0.!
SH4      !FMFAC = 1.! !END!
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VL57     !SRCNAM  = VL57    !
VL57     !X =   249.455,  -1332.348,  16.46341, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0011871314!
VL57     !SIGYZI = 0.,0.!
VL57     !FMFAC = 1.! !END!
FWFB20   !SRCNAM  = FWFB20  !
FWFB20   !X =   245.905,  -1330.898,  14.02439, 14.13,  0.91463,  0.00305,
300.80556,  0.0,  0.0011559469!
FWFB20   !SIGYZI = 0.,0.!
FWFB20   !FMFAC = 1.! !END!
MISTACKC !SRCNAM  = MISTACKC!
MISTACKC !X =   281.503,  -1337.678,  9.14634, 1.50,  0.25305,  7.92683,
635.77778,  0.0,  0.0011549809!
MISTACKC !SIGYZI = 0.,0.!
MISTACKC !FMFAC = 1.! !END!
VW5      !SRCNAM  = VW5     !
VW5      !X =   249.463,  -1332.598,  12.19512, 4.64,  0.91463,  0.00305,
298.55556,  0.0,  0.0011179165!
VW5      !SIGYZI = 0.,0.!
VW5      !FMFAC = 1.! !END!
CW525526 !SRCNAM  = CW525526!
CW525526 !X =   248.880,  -1333.366,  2.13415, 8.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0011075112!
CW525526 !SIGYZI = 0.,0.!
CW525526 !FMFAC = 1.! !END!
VETRUCKR !SRCNAM  = VETRUCKR!
VETRUCKR !X =   254.410,  -1332.753,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0011058207!
VETRUCKR !SIGYZI = 0.,0.!
VETRUCKR !FMFAC = 1.! !END!
CE645    !SRCNAM  = CE645   !
CE645    !X =   256.145,  -1333.479,  14.63415, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0010998358!
CE645    !SIGYZI = 0.,0.!
CE645    !FMFAC = 1.! !END!
A1TB2VNT !SRCNAM  = A1TB2VNT!
A1TB2VNT !X =   252.646,  -1300.839,  7.31707, 15.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0020470357!
A1TB2VNT !SIGYZI = 0.,0.!
A1TB2VNT !FMFAC = 1.! !END!
VL58     !SRCNAM  = VL58    !
VL58     !X =   249.453,  -1332.287,  16.46341, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0010714338!
VL58     !SIGYZI = 0.,0.!
VL58     !FMFAC = 1.! !END!
CE667A   !SRCNAM  = CE667A  !
CE667A   !X =   255.863,  -1333.299,  17.37805, 8.81,  0.91463,  0.00305,
298.55556,  0.0,  0.0010682313!
CE667A   !SIGYZI = 0.,0.!
CE667A   !FMFAC = 1.! !END!
FECE06ST !SRCNAM  = FECE06ST!
FECE06ST !X =   255.878,  -1333.768,  6.09756, 9.00,  0.30488,  21.64634,
730.22222,  0.0,  0.0010640314!
FECE06ST !SIGYZI = 0.,0.!
FECE06ST !FMFAC = 1.! !END!
FWFB17   !SRCNAM  = FWFB17  !
FWFB17   !X =   245.902,  -1330.774,  11.89024, 15.00,  0.91463,  0.00305,
299.25556,  0.0,  0.0010436827!
FWFB17   !SIGYZI = 0.,0.!
FWFB17   !FMFAC = 1.! !END!
VEDIST1F !SRCNAM  = VEDIST1F!
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VEDIST1F !X =   253.731,  -1333.119,  0.91463, 11.44,  0.01000,  0.01000,
294.00000,  0.0,  0.0010436827!
VEDIST1F !SIGYZI = 0.,0.!
VEDIST1F !FMFAC = 1.! !END!
FEC108   !SRCNAM  = FEC108  !
FEC108   !X =   255.872,  -1333.581,  15.54878, 8.20,  3.35366,  4.57317,
302.44444,  0.0,  0.0010363329!
FEC108   !SIGYZI = 0.,0.!
FEC108   !FMFAC = 1.! !END!
VL0113   !SRCNAM  = VL0113  !
VL0113   !X =   249.035,  -1333.018,  3.04878, 5.92,  0.91463,  0.00305,
299.66667,  0.0,  0.0010121833!
VL0113   !SIGYZI = 0.,0.!
VL0113   !FMFAC = 1.! !END!
VELEU2FE !SRCNAM  = VELEU2FE!
VELEU2FE !X =   253.706,  -1333.213,  0.91463, 11.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0009796338!
VELEU2FE !SIGYZI = 0.,0.!
VELEU2FE !FMFAC = 1.! !END!
FEE11TK8 !SRCNAM  = FEE11TK8!
FEE11TK8 !X =   255.997,  -1334.045,  8.84146, 9.00,  0.91463,  0.00305,
298.53333,  0.0,  0.0009541192!
FEE11TK8 !SIGYZI = 0.,0.!
FEE11TK8 !FMFAC = 1.! !END!
VEDEOCTF !SRCNAM  = VEDEOCTF!
VEDEOCTF !X =   252.635,  -1333.371,  0.91463, 9.88,  0.01000,  0.01000,
294.00000,  0.0,  0.0009523343!
VEDEOCTF !SIGYZI = 0.,0.!
VEDEOCTF !FMFAC = 1.! !END!
VECOGEN1 !SRCNAM  = VECOGEN1!
VECOGEN1 !X =   253.871,  -1333.175,  15.24390, 11.29,  3.04878,  22.46951,
477.44444,  0.0,  0.0009512843!
VECOGEN1 !SIGYZI = 0.,0.!
VECOGEN1 !FMFAC = 1.! !END!
FEE11TKD !SRCNAM  = FEE11TKD!
FEE11TKD !X =   255.685,  -1333.774,  14.63415, 9.00,  0.91463,  0.00305,
317.44444,  0.0,  0.0009407844!
FEE11TKD !SIGYZI = 0.,0.!
FEE11TKD !FMFAC = 1.! !END!
FWFMX1   !SRCNAM  = FWFMX1  !
FWFMX1   !X =   244.889,  -1331.054,  0.91463, 14.79,  0.01000,  0.01000,
294.00000,  0.0,  0.0009386845!
FWFMX1   !SIGYZI = 0.,0.!
FWFMX1   !FMFAC = 1.! !END!
VL55     !SRCNAM  = VL55    !
VL55     !X =   248.980,  -1333.050,  17.07317, 6.24,  0.91463,  0.00305,
298.55556,  0.0,  0.0009239847!
VL55     !SIGYZI = 0.,0.!
VL55     !FMFAC = 1.! !END!
VETK330  !SRCNAM  = VETK330 !
VETK330  !X =   252.602,  -1333.216,  14.63415, 8.22,  0.91463,  0.00305,
295.22222,  0.0,  0.0009197848!
VETK330  !SIGYZI = 0.,0.!
VETK330  !FMFAC = 1.! !END!
VW47F    !SRCNAM  = VW47F   !
VW47F    !X =   249.941,  -1332.863,  6.09756, 7.57,  0.01000,  0.01000,
294.00000,  0.0,  0.0009008851!
VW47F    !SIGYZI = 0.,0.!
VW47F    !FMFAC = 1.! !END!
FW45FB72 !SRCNAM  = FW45FB72!
FW45FB72 !X =   244.764,  -1330.591,  9.75610, 13.24,  0.91463,  0.00305,
299.15556,  0.0,  0.0008998351!
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FW45FB72 !SIGYZI = 0.,0.!
FW45FB72 !FMFAC = 1.! !END!
FTTK2856 !SRCNAM  = FTTK2856!
FTTK2856 !X =   278.016,  -1331.215,  6.09756, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0008998351!
FTTK2856 !SIGYZI = 0.,0.!
FTTK2856 !FMFAC = 1.! !END!
VEISOMFE !SRCNAM  = VEISOMFE!
VEISOMFE !X =   254.334,  -1332.975,  0.91463, 10.04,  0.01000,  0.01000,
294.00000,  0.0,  0.0008977352!
VEISOMFE !SIGYZI = 0.,0.!
VEISOMFE !FMFAC = 1.! !END!
CE732    !SRCNAM  = CE732   !
CE732    !X =   255.368,  -1333.347,  14.63415, 8.93,  0.91463,  0.00305,
298.55556,  0.0,  0.0008966852!
CE732    !SIGYZI = 0.,0.!
CE732    !FMFAC = 1.! !END!
VEKER01F !SRCNAM  = VEKER01F!
VEKER01F !X =   253.704,  -1333.119,  0.91463, 11.45,  0.01000,  0.01000,
294.00000,  0.0,  0.0008851354!
VEKER01F !SIGYZI = 0.,0.!
VEKER01F !FMFAC = 1.! !END!
VW4F     !SRCNAM  = VW4F    !
VW4F     !X =   250.298,  -1332.791,  1.82927, 6.92,  0.01000,  0.01000,
294.00000,  0.0,  0.0008782055!
VW4F     !SIGYZI = 0.,0.!
VW4F     !FMFAC = 1.! !END!
FEF114   !SRCNAM  = FEF114  !
FEF114   !X =   256.105,  -1333.104,  3.04878, 7.19,  0.01000,  0.01000,
294.00000,  0.0,  0.0008609858!
FEF114   !SIGYZI = 0.,0.!
FEF114   !FMFAC = 1.! !END!
NSB1     !SRCNAM  = NSB1    !
NSB1     !X =   258.025,  -1332.700,  6.09756, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0008546859!
NSB1     !SIGYZI = 0.,0.!
NSB1     !FMFAC = 1.! !END!
GRTKCOND !SRCNAM  = GRTKCOND!
GRTKCOND !X =   271.341,  -1318.463,  4.57317, 7.00,  0.91463,  0.00305,
310.77778,  0.0,  0.0008533209!
GRTKCOND !SIGYZI = 0.,0.!
GRTKCOND !FMFAC = 1.! !END!
FW45FB71 !SRCNAM  = FW45FB71!
FW45FB71 !X =   244.736,  -1330.591,  9.75610, 13.22,  0.91463,  0.00305,
299.39444,  0.0,  0.0008517459!
FW45FB71 !SIGYZI = 0.,0.!
FW45FB71 !FMFAC = 1.! !END!
GRE7     !SRCNAM  = GRE7    !
GRE7     !X =   271.552,  -1318.175,  6.70732, 6.16,  0.30488,  27.74390,
546.88889,  0.0,  0.0008399861!
GRE7     !SIGYZI = 0.,0.!
GRE7     !FMFAC = 1.! !END!
GRE2A    !SRCNAM  = GRE2A   !
GRE2A    !X =   271.477,  -1318.396,  6.70732, 6.19,  0.30488,  27.74390,
699.66667,  0.0,  0.0008378861!
GRE2A    !SIGYZI = 0.,0.!
GRE2A    !FMFAC = 1.! !END!
FW10FA12 !SRCNAM  = FW10FA12!
FW10FA12 !X =   245.761,  -1330.685,  7.31707, 14.10,  0.91463,  0.00305,
305.22222,  0.0,  0.0008084341!
FW10FA12 !SIGYZI = 0.,0.!
FW10FA12 !FMFAC = 1.! !END!
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COCU1    !SRCNAM  = COCU1   !
COCU1    !X =   255.409,  -1332.908,  54.87805, 7.16,  3.04878,  17.01220,
371.88889,  0.0,  0.0007958868!
COCU1    !SIGYZI = 0.,0.!
COCU1    !FMFAC = 1.! !END!
FWF16    !SRCNAM  = FWF16   !
FWF16    !X =   245.605,  -1331.002,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0007953618!
FWF16    !SIGYZI = 0.,0.!
FWF16    !FMFAC = 1.! !END!
FEE11TK9 !SRCNAM  = FEE11TK9!
FEE11TK9 !X =   255.939,  -1333.952,  9.14634, 9.00,  0.91463,  0.00305,
297.51667,  0.0,  0.0007874870!
FEE11TK9 !SIGYZI = 0.,0.!
FEE11TK9 !FMFAC = 1.! !END!
GRE4A    !SRCNAM  = GRE4A   !
GRE4A    !X =   271.340,  -1318.432,  7.01220, 7.00,  0.60976,  5.12195,
699.66667,  0.0,  0.0007832870!
GRE4A    !SIGYZI = 0.,0.!
GRE4A    !FMFAC = 1.! !END!
VECOGEN2 !SRCNAM  = VECOGEN2!
VECOGEN2 !X =   253.842,  -1333.147,  15.24390, 11.02,  3.04878,  22.46951,
477.44444,  0.0,  0.0007748872!
VECOGEN2 !SIGYZI = 0.,0.!
VECOGEN2 !FMFAC = 1.! !END!
FEC107   !SRCNAM  = FEC107  !
FEC107   !X =   255.872,  -1333.581,  16.46341, 8.20,  4.87805,  8.84146,
302.44444,  0.0,  0.0007706873!
FEC107   !SIGYZI = 0.,0.!
FEC107   !FMFAC = 1.! !END!
VETK503  !SRCNAM  = VETK503 !
VETK503  !X =   254.435,  -1332.690,  7.31707, 9.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0007580875!
VETK503  !SIGYZI = 0.,0.!
VETK503  !FMFAC = 1.! !END!
VW17     !SRCNAM  = VW17    !
VW17     !X =   249.652,  -1332.437,  12.19512, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0007575625!
VW17     !SIGYZI = 0.,0.!
VW17     !FMFAC = 1.! !END!
VW48F    !SRCNAM  = VW48F   !
VW48F    !X =   249.805,  -1332.899,  1.00000, 7.91,  0.01000,  0.01000,
294.00000,  0.0,  0.0007391878!
VW48F    !SIGYZI = 0.,0.!
VW48F    !FMFAC = 1.! !END!
CE693    !SRCNAM  = CE693   !
CE693    !X =   255.669,  -1333.274,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0007318379!
CE693    !SIGYZI = 0.,0.!
CE693    !FMFAC = 1.! !END!
CE876    !SRCNAM  = CE876   !
CE876    !X =   250.339,  -1333.226,  1.52439, 10.57,  0.01000,  0.01000,
294.00000,  0.0,  0.0007213381!
CE876    !SIGYZI = 0.,0.!
CE876    !FMFAC = 1.! !END!
VETK85   !SRCNAM  = VETK85  !
VETK85   !X =   253.877,  -1333.363,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0007192381!
VETK85   !SIGYZI = 0.,0.!
VETK85   !FMFAC = 1.! !END!
FWVRU1   !SRCNAM  = FWVRU1  !
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FWVRU1   !X =   243.865,  -1330.992,  7.62195, 15.65,  0.20427,  2.07317,
295.22222,  0.0,  0.0007076883!
FWVRU1   !SIGYZI = 0.,0.!
FWVRU1   !FMFAC = 1.! !END!
CE642    !SRCNAM  = CE642   !
CE642    !X =   256.033,  -1333.419,  14.63415, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0007076883!
CE642    !SIGYZI = 0.,0.!
CE642    !FMFAC = 1.! !END!
FTTK2804 !SRCNAM  = FTTK2804!
FTTK2804 !X =   278.115,  -1330.898,  14.63415, 4.04,  0.91463,  0.00305,
298.00000,  0.0,  0.0007076883!
FTTK2804 !SIGYZI = 0.,0.!
FTTK2804 !FMFAC = 1.! !END!
VETK77   !SRCNAM  = VETK77  !
VETK77   !X =   254.122,  -1333.262,  11.58537, 11.19,  0.91463,  0.00305,
295.22222,  0.0,  0.0006971885!
VETK77   !SIGYZI = 0.,0.!
VETK77   !FMFAC = 1.! !END!
FWFB4003 !SRCNAM  = FWFB4003!
FWFB4003 !X =   244.083,  -1330.892,  12.19512, 15.60,  0.91463,  0.00305,
290.45556,  0.0,  0.0006856387!
FWFB4003 !SIGYZI = 0.,0.!
FWFB4003 !FMFAC = 1.! !END!
VWGBF    !SRCNAM  = VWGBF   !
VWGBF    !X =   249.407,  -1332.569,  3.04878, 4.12,  0.01000,  0.01000,
294.00000,  0.0,  0.0006735849!
VWGBF    !SIGYZI = 0.,0.!
VWGBF    !FMFAC = 1.! !END!
FWFB4007 !SRCNAM  = FWFB4007!
FWFB4007 !X =   244.058,  -1330.955,  15.24390, 16.27,  0.91463,  0.00305,
299.47222,  0.0,  0.0006593891!
FWFB4007 !SIGYZI = 0.,0.!
FWFB4007 !FMFAC = 1.! !END!
GRE3     !SRCNAM  = GRE3    !
GRE3     !X =   271.477,  -1318.396,  6.70732, 6.19,  0.30488,  27.74390,
699.66667,  0.0,  0.0006572891!
GRE3     !SIGYZI = 0.,0.!
GRE3     !FMFAC = 1.! !END!
FWFB4004 !SRCNAM  = FWFB4004!
FWFB4004 !X =   244.083,  -1330.892,  12.19512, 15.60,  0.91463,  0.00305,
290.80000,  0.0,  0.0006562391!
FWFB4004 !SIGYZI = 0.,0.!
FWFB4004 !FMFAC = 1.! !END!
FWFB4008 !SRCNAM  = FWFB4008!
FWFB4008 !X =   244.085,  -1330.955,  15.24390, 16.27,  0.91463,  0.00305,
292.66667,  0.0,  0.0006467893!
FWFB4008 !SIGYZI = 0.,0.!
FWFB4008 !FMFAC = 1.! !END!
FWFVCS1  !SRCNAM  = FWFVCS1 !
FWFVCS1  !X =   245.714,  -1330.092,  0.91463, 5.42,  0.01000,  0.01000,
294.00000,  0.0,  0.0006425894!
FWFVCS1  !SIGYZI = 0.,0.!
FWFVCS1  !FMFAC = 1.! !END!
VERAFF1F !SRCNAM  = VERAFF1F!
VERAFF1F !X =   254.500,  -1332.999,  12.19512, 9.63,  0.01000,  0.01000,
294.00000,  0.0,  0.0006331395!
VERAFF1F !SIGYZI = 0.,0.!
VERAFF1F !FMFAC = 1.! !END!
GRE6     !SRCNAM  = GRE6    !
GRE6     !X =   271.441,  -1318.116,  8.84146, 7.00,  0.60976,  10.12500,
689.11111,  0.0,  0.0006299896!
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GRE6     !SIGYZI = 0.,0.!
GRE6     !FMFAC = 1.! !END!
VEQHDS2F !SRCNAM  = VEQHDS2F!
VEQHDS2F !X =   252.551,  -1333.343,  0.91463, 9.56,  0.01000,  0.01000,
294.00000,  0.0,  0.0006131899!
VEQHDS2F !SIGYZI = 0.,0.!
VEQHDS2F !FMFAC = 1.! !END!
VETK89   !SRCNAM  = VETK89  !
VETK89   !X =   253.798,  -1333.459,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0006089899!
VETK89   !SIGYZI = 0.,0.!
VETK89   !FMFAC = 1.! !END!
FWFB410  !SRCNAM  = FWFB410 !
FWFB410  !X =   253.939,  -1333.549,  14.63415, 12.00,  0.91463,  0.00305,
303.31111,  0.0,  0.0006026900!
FWFB410  !SIGYZI = 0.,0.!
FWFB410  !FMFAC = 1.! !END!
GRE5A    !SRCNAM  = GRE5A   !
GRE5A    !X =   271.450,  -1318.396,  7.62195, 6.52,  0.45732,  15.24390,
699.66667,  0.0,  0.0005995401!
GRE5A    !SIGYZI = 0.,0.!
GRE5A    !FMFAC = 1.! !END!
CEF1001  !SRCNAM  = CEF1001 !
CEF1001  !X =   256.150,  -1332.792,  6.09756, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0005901952!
CEF1001  !SIGYZI = 0.,0.!
CEF1001  !FMFAC = 1.! !END!
FEF118   !SRCNAM  = FEF118  !
FEF118   !X =   256.320,  -1332.911,  0.91463, 2.45,  0.01000,  0.01000,
294.00000,  0.0,  0.0005648907!
FEF118   !SIGYZI = 0.,0.!
FEF118   !FMFAC = 1.! !END!
FWFB1    !SRCNAM  = FWFB1   !
FWFB1    !X =   246.012,  -1330.771,  9.14634, 13.68,  0.91463,  0.00305,
312.44444,  0.0,  0.0005533409!
FWFB1    !SIGYZI = 0.,0.!
FWFB1    !FMFAC = 1.! !END!
VETK90   !SRCNAM  = VETK90  !
VETK90   !X =   253.828,  -1333.553,  14.93902, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0005449410!
VETK90   !SIGYZI = 0.,0.!
VETK90   !FMFAC = 1.! !END!
FWFB146  !SRCNAM  = FWFB146 !
FWFB146  !X =   245.367,  -1330.447,  14.63415, 14.49,  0.91463,  0.00305,
381.20556,  0.0,  0.0005396911!
FWFB146  !SIGYZI = 0.,0.!
FWFB146  !FMFAC = 1.! !END!
TRBARGED !SRCNAM  = TRBARGED!
TRBARGED !X =   249.418,  -1332.006,  0.91463, 1.55,  0.01000,  0.01000,
294.00000,  0.0,  0.0005246343!
TRBARGED !SIGYZI = 0.,0.!
TRBARGED !FMFAC = 1.! !END!
MIFLASH  !SRCNAM  = MIFLASH !
MIFLASH  !X =   281.474,  -1337.648,  3.65854, 4.00,  0.91463,  0.00305,
294.94444,  0.0,  0.0005137775!
MIFLASH  !SIGYZI = 0.,0.!
MIFLASH  !FMFAC = 1.! !END!
GP102    !SRCNAM  = GP102   !
GP102    !X =   271.999,  -1323.963,  60.67073, 6.00,  5.79268,  13.59756,
571.88889,  0.0,  0.0005092416!
GP102    !SIGYZI = 0.,0.!
GP102    !FMFAC = 1.! !END!
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GP101    !SRCNAM  = GP101   !
GP101    !X =   271.970,  -1323.933,  60.67073, 6.00,  5.79268,  13.59756,
571.88889,  0.0,  0.0005071416!
GP101    !SIGYZI = 0.,0.!
GP101    !FMFAC = 1.! !END!
FWF20    !SRCNAM  = FWF20   !
FWF20    !X =   245.720,  -1331.185,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0005034667!
FWF20    !SIGYZI = 0.,0.!
FWF20    !FMFAC = 1.! !END!
CE737    !SRCNAM  = CE737   !
CE737    !X =   255.309,  -1333.254,  6.09756, 8.53,  0.91463,  0.00305,
298.55556,  0.0,  0.0004984478!
CE737    !SIGYZI = 0.,0.!
CE737    !FMFAC = 1.! !END!
NCDRIP1  !SRCNAM  = NCDRIP1 !
NCDRIP1  !X =   226.675,  -1327.165,  4.57317, 27.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0004982168!
NCDRIP1  !SIGYZI = 0.,0.!
NCDRIP1  !FMFAC = 1.! !END!
FW10FA11 !SRCNAM  = FW10FA11!
FW10FA11 !X =   245.899,  -1330.681,  7.31707, 14.95,  0.91463,  0.00305,
288.55556,  0.0,  0.0004978493!
FW10FA11 !SIGYZI = 0.,0.!
FW10FA11 !FMFAC = 1.! !END!
NCDRIP2  !SRCNAM  = NCDRIP2 !
NCDRIP2  !X =   226.675,  -1327.165,  4.57317, 27.00,  0.91463,  0.00305,
296.33333,  0.0,  0.0004976918!
NCDRIP2  !SIGYZI = 0.,0.!
NCDRIP2  !FMFAC = 1.! !END!
VEPD11   !SRCNAM  = VEPD11  !
VEPD11   !X =   254.411,  -1331.942,  0.91463, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0004840420!
VEPD11   !SIGYZI = 0.,0.!
VEPD11   !FMFAC = 1.! !END!
EQ44     !SRCNAM  = EQ44    !
EQ44     !X =   238.814,  -1333.706,  22.86585, 18.00,  3.04878,  23.71646,
449.66667,  0.0,  0.0004840420!
EQ44     !SIGYZI = 0.,0.!
EQ44     !FMFAC = 1.! !END!
FEE18TKC !SRCNAM  = FEE18TKC!
FEE18TKC !X =   256.768,  -1333.115,  3.04878, 7.00,  0.91463,  0.00305,
298.60556,  0.0,  0.0004808920!
FEE18TKC !SIGYZI = 0.,0.!
FEE18TKC !FMFAC = 1.! !END!
FEFL118  !SRCNAM  = FEFL118 !
FEFL118  !X =   256.319,  -1332.879,  9.14634, 1.50,  1.82927,  1.52439,
634.11111,  0.0,  0.0004808920!
FEFL118  !SIGYZI = 0.,0.!
FEFL118  !FMFAC = 1.! !END!
VWVRU    !SRCNAM  = VWVRU   !
VWVRU    !X =   249.383,  -1332.694,  9.14634, 4.22,  0.30488,  1.89024,
310.77778,  0.0,  0.0004808920!
VWVRU    !SIGYZI = 0.,0.!
VWVRU    !FMFAC = 1.! !END!
FTFWPTK  !SRCNAM  = FTFWPTK !
FTFWPTK  !X =   278.019,  -1331.276,  1.21951, 4.00,  0.91463,  0.00305,
296.05556,  0.0,  0.0004713582!
FTFWPTK  !SIGYZI = 0.,0.!
FTFWPTK  !FMFAC = 1.! !END!
FEC109   !SRCNAM  = FEC109  !
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FEC109   !X =   255.794,  -1333.739,  10.36585, 9.00,  3.35366,  4.57317,
299.66667,  0.0,  0.0004577924!
FEC109   !SIGYZI = 0.,0.!
FEC109   !FMFAC = 1.! !END!
VETK354  !SRCNAM  = VETK354 !
VETK354  !X =   252.548,  -1333.250,  14.63415, 8.57,  0.91463,  0.00305,
295.22222,  0.0,  0.0004535925!
VETK354  !SIGYZI = 0.,0.!
VETK354  !FMFAC = 1.! !END!
VEDOCK7F !SRCNAM  = VEDOCK7F!
VEDOCK7F !X =   254.660,  -1331.965,  4.57317, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0004457176!
VEDOCK7F !SIGYZI = 0.,0.!
VEDOCK7F !FMFAC = 1.! !END!
COCU2    !SRCNAM  = COCU2   !
COCU2    !X =   255.463,  -1332.907,  54.87805, 7.00,  3.04878,  17.01220,
371.88889,  0.0,  0.0004409927!
COCU2    !SIGYZI = 0.,0.!
COCU2    !FMFAC = 1.! !END!
CE063    !SRCNAM  = CE063   !
CE063    !X =   255.701,  -1333.430,  7.62195, 8.40,  0.20427,  23.78049,
616.33333,  0.0,  0.0004399427!
CE063    !SIGYZI = 0.,0.!
CE063    !FMFAC = 1.! !END!
CE062    !SRCNAM  = CE062   !
CE062    !X =   255.701,  -1333.430,  7.62195, 8.40,  0.20427,  23.78049,
616.33333,  0.0,  0.0004399427!
CE062    !SIGYZI = 0.,0.!
CE062    !FMFAC = 1.! !END!
CE064    !SRCNAM  = CE064   !
CE064    !X =   255.701,  -1333.430,  7.62195, 8.40,  0.20427,  23.78049,
616.33333,  0.0,  0.0004399427!
CE064    !SIGYZI = 0.,0.!
CE064    !FMFAC = 1.! !END!
CEF321   !SRCNAM  = CEF321  !
CEF321   !X =   255.443,  -1333.157,  3.04878, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004253060!
CEF321   !SIGYZI = 0.,0.!
CEF321   !FMFAC = 1.! !END!
FWFB4006 !SRCNAM  = FWFB4006!
FWFB4006 !X =   244.086,  -1330.986,  15.24390, 16.61,  0.91463,  0.00305,
298.00000,  0.0,  0.0004157931!
FWFB4006 !SIGYZI = 0.,0.!
FWFB4006 !FMFAC = 1.! !END!
CE773    !SRCNAM  = CE773   !
CE773    !X =   255.270,  -1333.756,  15.24390, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0004153731!
CE773    !SIGYZI = 0.,0.!
CE773    !FMFAC = 1.! !END!
FEF121   !SRCNAM  = FEF121  !
FEF121   !X =   255.772,  -1333.927,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004126432!
FEF121   !SIGYZI = 0.,0.!
FEF121   !FMFAC = 1.! !END!
SCC93    !SRCNAM  = SCC93   !
SCC93    !X =   248.228,  -1334.572,  10.06098, 13.00,  0.20427,  0.01000,
294.00000,  0.0,  0.0004063433!
SCC93    !SIGYZI = 0.,0.!
SCC93    !FMFAC = 1.! !END!
VWT3F    !SRCNAM  = VWT3F   !
VWT3F    !X =   249.405,  -1332.475,  6.09756, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004014294!
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VWT3F    !SIGYZI = 0.,0.!
VWT3F    !FMFAC = 1.! !END!
VETK22   !SRCNAM  = VETK22  !
VETK22   !X =   254.209,  -1333.385,  14.63415, 11.62,  0.91463,  0.00305,
295.22222,  0.0,  0.0003937435!
VETK22   !SIGYZI = 0.,0.!
VETK22   !FMFAC = 1.! !END!
VETK19   !SRCNAM  = VETK19  !
VETK19   !X =   254.157,  -1333.479,  14.63415, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0003905935!
VETK19   !SIGYZI = 0.,0.!
VETK19   !FMFAC = 1.! !END!
FWFB409  !SRCNAM  = FWFB409 !
FWFB409  !X =   253.914,  -1333.643,  14.63415, 12.00,  0.91463,  0.00305,
302.21111,  0.0,  0.0003895436!
FWFB409  !SIGYZI = 0.,0.!
FWFB409  !FMFAC = 1.! !END!
VETK74   !SRCNAM  = VETK74  !
VETK74   !X =   254.046,  -1333.482,  9.14634, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0003874436!
VETK74   !SIGYZI = 0.,0.!
VETK74   !FMFAC = 1.! !END!
VETK17   !SRCNAM  = VETK17  !
VETK17   !X =   254.068,  -1333.294,  9.14634, 11.54,  0.91463,  0.00305,
295.22222,  0.0,  0.0003758938!
VETK17   !SIGYZI = 0.,0.!
VETK17   !FMFAC = 1.! !END!
VW15     !SRCNAM  = VW15    !
VW15     !X =   249.625,  -1332.468,  9.75610, 4.25,  0.91463,  0.00305,
298.55556,  0.0,  0.0003746863!
VW15     !SIGYZI = 0.,0.!
VW15     !FMFAC = 1.! !END!
VETK14   !SRCNAM  = VETK14  !
VETK14   !X =   254.208,  -1333.353,  14.63415, 11.33,  0.91463,  0.00305,
295.22222,  0.0,  0.0003695939!
VETK14   !SIGYZI = 0.,0.!
VETK14   !FMFAC = 1.! !END!
MIT7     !SRCNAM  = MIT7    !
MIT7     !X =   281.474,  -1337.648,  3.65854, 4.00,  0.91463,  0.00305,
294.94444,  0.0,  0.0003614460!
MIT7     !SIGYZI = 0.,0.!
MIT7     !FMFAC = 1.! !END!
NASCGRP6 !SRCNAM  = NASCGRP6!
NASCGRP6 !X =   271.164,  -1345.626,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003517442!
NASCGRP6 !SIGYZI = 0.,0.!
NASCGRP6 !FMFAC = 1.! !END!
VEISOMDI !SRCNAM  = VEISOMDI!
VEISOMDI !X =   254.361,  -1332.942,  4.57317, 9.88,  0.01000,  0.01000,
294.00000,  0.0,  0.0003454443!
VEISOMDI !SIGYZI = 0.,0.!
VEISOMDI !FMFAC = 1.! !END!
TP305COG !SRCNAM  = TP305COG!
TP305COG !X =   217.189,  -1361.680,  21.95122, 17.00,  3.65854,  15.51829,
441.33333,  0.0,  0.0003443943!
TP305COG !SIGYZI = 0.,0.!
TP305COG !FMFAC = 1.! !END!
VW11     !SRCNAM  = VW11    !
VW11     !X =   249.546,  -1332.595,  12.19512, 5.09,  0.91463,  0.00305,
298.55556,  0.0,  0.0003412444!
VW11     !SIGYZI = 0.,0.!
VW11     !FMFAC = 1.! !END!
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FEE11TKI !SRCNAM  = FEE11TKI!
FEE11TKI !X =   255.578,  -1333.871,  14.63415, 9.00,  0.91463,  0.00305,
308.01111,  0.0,  0.0003307445!
FEE11TKI !SIGYZI = 0.,0.!
FEE11TKI !FMFAC = 1.! !END!
FWFTR101 !SRCNAM  = FWFTR101!
FWFTR101 !X =   243.836,  -1330.932,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003275946!
FWFTR101 !SIGYZI = 0.,0.!
FWFTR101 !FMFAC = 1.! !END!
FWFFGHU  !SRCNAM  = FWFFGHU !
FWFFGHU  !X =   245.607,  -1331.095,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003275946!
FWFFGHU  !SIGYZI = 0.,0.!
FWFFGHU  !FMFAC = 1.! !END!
GRE1A    !SRCNAM  = GRE1A   !
GRE1A    !X =   271.367,  -1318.399,  7.01220, 7.00,  0.60976,  3.84146,
699.66667,  0.0,  0.0003254946!
GRE1A    !SIGYZI = 0.,0.!
GRE1A    !FMFAC = 1.! !END!
NSS103   !SRCNAM  = NSS103  !
NSS103   !X =   257.817,  -1332.270,  7.31707, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0003160448!
NSS103   !SIGYZI = 0.,0.!
NSS103   !FMFAC = 1.! !END!
TRTERMFU !SRCNAM  = TRTERMFU!
TRTERMFU !X =   249.190,  -1332.669,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003151523!
TRTERMFU !SIGYZI = 0.,0.!
TRTERMFU !FMFAC = 1.! !END!
VW36     !SRCNAM  = VW36    !
VW36     !X =   249.519,  -1332.627,  10.67073, 4.98,  0.91463,  0.00305,
298.55556,  0.0,  0.0003132623!
VW36     !SIGYZI = 0.,0.!
VW36     !FMFAC = 1.! !END!
FWF12    !SRCNAM  = FWF12   !
FWF12    !X =   245.609,  -1331.158,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003086949!
FWF12    !SIGYZI = 0.,0.!
FWF12    !FMFAC = 1.! !END!
CE872    !SRCNAM  = CE872   !
CE872    !X =   250.201,  -1333.199,  13.41463, 10.24,  0.91463,  0.00305,
298.55556,  0.0,  0.0003044950!
CE872    !SIGYZI = 0.,0.!
CE872    !FMFAC = 1.! !END!
WT132    !SRCNAM  = WT132   !
WT132    !X =   254.635,  -1333.776,  12.80488, 12.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0003002950!
WT132    !SIGYZI = 0.,0.!
WT132    !FMFAC = 1.! !END!
FWVCS2   !SRCNAM  = FWVCS2  !
FWVCS2   !X =   246.395,  -1330.665,  7.31707, 4.36,  1.82927,  14.54268,
533.00000,  0.0,  0.0011723056!
FWVCS2   !SIGYZI = 0.,0.!
FWVCS2   !FMFAC = 1.! !END!
GRL1     !SRCNAM  = GRL1    !
GRL1     !X =   271.341,  -1318.463,  3.04878, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002934701!
GRL1     !SIGYZI = 0.,0.!
GRL1     !FMFAC = 1.! !END!
NSS104   !SRCNAM  = NSS104  !
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NSS104   !X =   257.791,  -1332.302,  7.31707, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0002887452!
NSS104   !SIGYZI = 0.,0.!
NSS104   !FMFAC = 1.! !END!
NSS105   !SRCNAM  = NSS105  !
NSS105   !X =   257.847,  -1332.331,  7.31707, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0002887452!
NSS105   !SIGYZI = 0.,0.!
NSS105   !FMFAC = 1.! !END!
CE873    !SRCNAM  = CE873   !
CE873    !X =   250.339,  -1333.226,  13.41463, 10.57,  0.91463,  0.00305,
298.55556,  0.0,  0.0002803454!
CE873    !SIGYZI = 0.,0.!
CE873    !FMFAC = 1.! !END!
VW37     !SRCNAM  = VW37    !
VW37     !X =   249.547,  -1332.626,  10.67073, 5.13,  0.91463,  0.00305,
298.55556,  0.0,  0.0002764079!
VW37     !SIGYZI = 0.,0.!
VW37     !FMFAC = 1.! !END!
A1ICVNT  !SRCNAM  = A1ICVNT !
A1ICVNT  !X =   252.646,  -1300.839,  5.48780, 15.00,  0.60976,  21.34146,
560.77778,  0.0,  0.0002698455!
A1ICVNT  !SIGYZI = 0.,0.!
A1ICVNT  !FMFAC = 1.! !END!
WTLD4    !SRCNAM  = WTLD4   !
WTLD4    !X =   255.254,  -1332.384,  0.91463, 6.23,  0.01000,  0.01000,
294.00000,  0.0,  0.0002498959!
WTLD4    !SIGYZI = 0.,0.!
WTLD4    !FMFAC = 1.! !END!
VETK359  !SRCNAM  = VETK359 !
VETK359  !X =   252.825,  -1333.241,  14.63415, 8.78,  0.91463,  0.00305,
295.22222,  0.0,  0.0002456959!
VETK359  !SIGYZI = 0.,0.!
VETK359  !FMFAC = 1.! !END!
MIT4     !SRCNAM  = MIT4    !
MIT4     !X =   281.474,  -1337.648,  6.09756, 4.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0002456959!
MIT4     !SIGYZI = 0.,0.!
MIT4     !FMFAC = 1.! !END!
MIT5     !SRCNAM  = MIT5    !
MIT5     !X =   281.474,  -1337.648,  6.09756, 4.00,  0.91463,  0.00305,
294.94444,  0.0,  0.0002456959!
MIT5     !SIGYZI = 0.,0.!
MIT5     !FMFAC = 1.! !END!
MIT6     !SRCNAM  = MIT6    !
MIT6     !X =   281.474,  -1337.648,  6.09756, 4.00,  0.91463,  0.00305,
294.94444,  0.0,  0.0002456959!
MIT6     !SIGYZI = 0.,0.!
MIT6     !FMFAC = 1.! !END!
FWVCU    !SRCNAM  = FWVCU   !
FWVCU    !X =   243.839,  -1331.024,  6.09756, 15.76,  0.30488,  9.14634,
477.44444,  0.0,  0.0002404460!
FWVCU    !SIGYZI = 0.,0.!
FWVCU    !FMFAC = 1.! !END!
CE146    !SRCNAM  = CE146   !
CE146    !X =   256.039,  -1333.606,  7.01220, 8.00,  0.20427,  25.00000,
616.33333,  0.0,  0.0002393960!
CE146    !SIGYZI = 0.,0.!
CE146    !FMFAC = 1.! !END!
CE166    !SRCNAM  = CE166   !
CE166    !X =   256.011,  -1333.607,  7.01220, 8.10,  0.20427,  25.00000,
616.33333,  0.0,  0.0002393960!
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CE166    !SIGYZI = 0.,0.!
CE166    !FMFAC = 1.! !END!
CE145    !SRCNAM  = CE145   !
CE145    !X =   256.011,  -1333.607,  7.01220, 8.10,  0.20427,  25.00000,
616.33333,  0.0,  0.0002393960!
CE145    !SIGYZI = 0.,0.!
CE145    !FMFAC = 1.! !END!
CE144    !SRCNAM  = CE144   !
CE144    !X =   256.011,  -1333.607,  7.01220, 8.10,  0.20427,  25.00000,
616.33333,  0.0,  0.0002393960!
CE144    !SIGYZI = 0.,0.!
CE144    !FMFAC = 1.! !END!
CEF861   !SRCNAM  = CEF861  !
CEF861   !X =   248.806,  -1331.870,  6.09756, 2.42,  0.01000,  0.01000,
294.00000,  0.0,  0.0002372961!
CEF861   !SIGYZI = 0.,0.!
CEF861   !FMFAC = 1.! !END!
GRE6A    !SRCNAM  = GRE6A   !
GRE6A    !X =   271.037,  -1318.411,  5.79268, 7.00,  0.32927,  27.74390,
699.66667,  0.0,  0.0002299462!
GRE6A    !SIGYZI = 0.,0.!
GRE6A    !FMFAC = 1.! !END!
FWFS201  !SRCNAM  = FWFS201 !
FWFS201  !X =   244.600,  -1330.657,  12.19512, 14.00,  6.09756,  7.92683,
305.22222,  0.0,  0.0002283712!
FWFS201  !SIGYZI = 0.,0.!
FWFS201  !FMFAC = 1.! !END!
CD9817   !SRCNAM  = CD9817  !
CD9817   !X =   254.380,  -1333.565,  12.80488, 12.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0002275522!
CD9817   !SIGYZI = 0.,0.!
CD9817   !FMFAC = 1.! !END!
VEISOMST !SRCNAM  = VEISOMST!
VEISOMST !X =   254.390,  -1332.973,  15.24390, 10.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002157714!
VEISOMST !SIGYZI = 0.,0.!
VEISOMST !FMFAC = 1.! !END!
VEPD7    !SRCNAM  = VEPD7   !
VEPD7    !X =   254.660,  -1331.965,  0.91463, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0002152464!
VEPD7    !SIGYZI = 0.,0.!
VEPD7    !FMFAC = 1.! !END!
FWFB9    !SRCNAM  = FWFB9   !
FWFB9    !X =   245.956,  -1330.772,  11.89024, 14.52,  0.91463,  0.00305,
299.66667,  0.0,  0.0002094715!
FWFB9    !SIGYZI = 0.,0.!
FWFB9    !FMFAC = 1.! !END!
VWT22AF  !SRCNAM  = VWT22AF !
VWT22AF  !X =   249.062,  -1332.986,  1.82927, 5.59,  0.01000,  0.01000,
294.00000,  0.0,  0.0002080856!
VWT22AF  !SIGYZI = 0.,0.!
VWT22AF  !FMFAC = 1.! !END!
A2C9     !SRCNAM  = A2C9    !
A2C9     !X =   252.740,  -1302.924,  4.26829, 12.97,  0.20122,  27.43902,
644.11111,  0.0,  0.0002068466!
A2C9     !SIGYZI = 0.,0.!
A2C9     !FMFAC = 1.! !END!
FWF13    !SRCNAM  = FWF13   !
FWF13    !X =   245.638,  -1331.187,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002057966!
FWF13    !SIGYZI = 0.,0.!
FWF13    !FMFAC = 1.! !END!
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EQ53     !SRCNAM  = EQ53    !
EQ53     !X =   239.083,  -1333.478,  5.48780, 18.00,  0.30488,  0.00305,
298.00000,  0.0,  0.0002047466!
EQ53     !SIGYZI = 0.,0.!
EQ53     !FMFAC = 1.! !END!
FWF28    !SRCNAM  = FWF28   !
FWF28    !X =   245.577,  -1331.003,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001973967!
FWF28    !SIGYZI = 0.,0.!
FWF28    !FMFAC = 1.! !END!
A2C10    !SRCNAM  = A2C10   !
A2C10    !X =   252.740,  -1302.924,  6.40244, 12.97,  0.36585,  22.86585,
644.11111,  0.0,  0.0001973967!
A2C10    !SIGYZI = 0.,0.!
A2C10    !FMFAC = 1.! !END!
NSS101   !SRCNAM  = NSS101  !
NSS101   !X =   257.763,  -1332.303,  7.62195, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0001910968!
NSS101   !SIGYZI = 0.,0.!
NSS101   !FMFAC = 1.! !END!
GRE4     !SRCNAM  = GRE4    !
GRE4     !X =   271.477,  -1318.396,  6.70732, 6.19,  0.30488,  27.74390,
699.66667,  0.0,  0.0001910968!
GRE4     !SIGYZI = 0.,0.!
GRE4     !FMFAC = 1.! !END!
NSS102   !SRCNAM  = NSS102  !
NSS102   !X =   252.300,  -1332.383,  7.62195, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0001900469!
NSS102   !SIGYZI = 0.,0.!
NSS102   !FMFAC = 1.! !END!
VETK88   !SRCNAM  = VETK88  !
VETK88   !X =   253.830,  -1333.615,  14.93902, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0001900469!
VETK88   !SIGYZI = 0.,0.!
VETK88   !FMFAC = 1.! !END!
FWFB3040 !SRCNAM  = FWFB3040!
FWFB3040 !X =   243.803,  -1330.745,  14.63415, 14.97,  0.91463,  0.00305,
321.94444,  0.0,  0.0001868969!
FWFB3040 !SIGYZI = 0.,0.!
FWFB3040 !FMFAC = 1.! !END!
NASET005 !SRCNAM  = NASET005!
NASET005 !X =   271.140,  -1345.689,  15.24390, 4.00,  1.06707,  15.24390,
644.11111,  0.0,  0.0001805970!
NASET005 !SIGYZI = 0.,0.!
NASET005 !FMFAC = 1.! !END!
VEMEROXW !SRCNAM  = VEMEROXW!
VEMEROXW !X =   253.706,  -1333.213,  0.91463, 11.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001763971!
VEMEROXW !SIGYZI = 0.,0.!
VEMEROXW !FMFAC = 1.! !END!
GRE5     !SRCNAM  = GRE5    !
GRE5     !X =   271.477,  -1318.396,  6.70732, 6.19,  0.20122,  25.00000,
699.66667,  0.0,  0.0001742971!
GRE5     !SIGYZI = 0.,0.!
GRE5     !FMFAC = 1.! !END!
FWFS101  !SRCNAM  = FWFS101 !
FWFS101  !X =   243.997,  -1330.771,  7.62195, 15.00,  3.35366,  7.92683,
305.22222,  0.0,  0.0001711472!
FWFS101  !SIGYZI = 0.,0.!
FWFS101  !FMFAC = 1.! !END!
VETK504  !SRCNAM  = VETK504 !
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VETK504  !X =   254.434,  -1332.659,  7.31707, 8.98,  0.91463,  0.00305,
295.22222,  0.0,  0.0001690472!
VETK504  !SIGYZI = 0.,0.!
VETK504  !FMFAC = 1.! !END!
VETK200  !SRCNAM  = VETK200 !
VETK200  !X =   254.602,  -1332.747,  5.48780, 8.76,  0.91463,  0.00305,
295.22222,  0.0,  0.0001595974!
VETK200  !SIGYZI = 0.,0.!
VETK200  !FMFAC = 1.! !END!
BD2      !SRCNAM  = BD2     !
BD2      !X =   267.881,  -1355.734,  48.78049, 4.00,  4.69512,  17.31707,
391.33333,  0.0,  0.0001574974!
BD2      !SIGYZI = 0.,0.!
BD2      !FMFAC = 1.! !END!
CE501    !SRCNAM  = CE501   !
CE501    !X =   255.264,  -1333.569,  1.21951, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001543054!
CE501    !SIGYZI = 0.,0.!
CE501    !FMFAC = 1.! !END!
WT101    !SRCNAM  = WT101   !
WT101    !X =   254.465,  -1333.625,  12.80488, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0001532975!
WT101    !SIGYZI = 0.,0.!
WT101    !FMFAC = 1.! !END!
VW18F    !SRCNAM  = VW18F   !
VW18F    !X =   250.297,  -1332.759,  7.62195, 6.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0001496855!
VW18F    !SIGYZI = 0.,0.!
VW18F    !FMFAC = 1.! !END!
GRE2     !SRCNAM  = GRE2    !
GRE2     !X =   271.477,  -1318.396,  6.70732, 6.19,  0.30488,  27.74390,
699.66667,  0.0,  0.0001490975!
GRE2     !SIGYZI = 0.,0.!
GRE2     !FMFAC = 1.! !END!
VETK329  !SRCNAM  = VETK329 !
VETK329  !X =   252.522,  -1333.282,  12.19512, 8.90,  1.00000,  0.00305,
295.22222,  0.0,  0.0001333478!
VETK329  !SIGYZI = 0.,0.!
VETK329  !FMFAC = 1.! !END!
FWFB3041 !SRCNAM  = FWFB3041!
FWFB3041 !X =   243.801,  -1330.682,  14.63415, 14.65,  0.91463,  0.00305,
326.88889,  0.0,  0.0001301978!
FWFB3041 !SIGYZI = 0.,0.!
FWFB3041 !FMFAC = 1.! !END!
VETK500  !SRCNAM  = VETK500 !
VETK500  !X =   254.487,  -1332.594,  7.62195, 8.36,  0.91463,  0.00305,
295.22222,  0.0,  0.0001291479!
VETK500  !SIGYZI = 0.,0.!
VETK500  !FMFAC = 1.! !END!
CE739    !SRCNAM  = CE739   !
CE739    !X =   255.263,  -1333.538,  6.09756, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0001228060!
CE739    !SIGYZI = 0.,0.!
CE739    !FMFAC = 1.! !END!
VETK205  !SRCNAM  = VETK205 !
VETK205  !X =   254.036,  -1333.141,  12.19512, 10.90,  0.91463,  0.00305,
295.22222,  0.0,  0.0001186480!
VETK205  !SIGYZI = 0.,0.!
VETK205  !FMFAC = 1.! !END!
CEF3200  !SRCNAM  = CEF3200 !
CEF3200  !X =   255.361,  -1333.128,  7.62195, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001165481!
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CEF3200  !SIGYZI = 0.,0.!
CEF3200  !FMFAC = 1.! !END!
VETK326  !SRCNAM  = VETK326 !
VETK326  !X =   252.522,  -1333.282,  12.19512, 8.90,  1.00000,  0.00305,
295.22222,  0.0,  0.0001165481!
VETK326  !SIGYZI = 0.,0.!
VETK326  !FMFAC = 1.! !END!
CW521FUG !SRCNAM  = CW521FUG!
CW521FUG !X =   248.738,  -1333.245,  6.09756, 7.24,  0.01000,  0.01000,
294.00000,  0.0,  0.0001164851!
CW521FUG !SIGYZI = 0.,0.!
CW521FUG !FMFAC = 1.! !END!
FWFS2    !SRCNAM  = FWFS2   !
FWFS2    !X =   245.716,  -1331.061,  14.02439, 15.00,  6.09756,  8.23171,
308.00000,  0.0,  0.0001139231!
FWFS2    !SIGYZI = 0.,0.!
FWFS2    !FMFAC = 1.! !END!
CE204    !SRCNAM  = CE204   !
CE204    !X =   255.374,  -1333.534,  7.01220, 9.00,  0.20427,  24.20732,
639.66667,  0.0,  0.0001102482!
CE204    !SIGYZI = 0.,0.!
CE204    !FMFAC = 1.! !END!
CE205    !SRCNAM  = CE205   !
CE205    !X =   255.374,  -1333.534,  7.01220, 9.00,  0.20427,  24.20732,
639.66667,  0.0,  0.0001102482!
CE205    !SIGYZI = 0.,0.!
CE205    !FMFAC = 1.! !END!
CE206    !SRCNAM  = CE206   !
CE206    !X =   255.374,  -1333.534,  7.01220, 9.00,  0.20427,  24.20732,
639.66667,  0.0,  0.0001102482!
CE206    !SIGYZI = 0.,0.!
CE206    !FMFAC = 1.! !END!
SH1      !SRCNAM  = SH1     !
SH1      !X =   241.973,  -1335.015,  25.00000, 18.00,  1.21951,  22.95732,
653.55556,  0.0,  0.0001081482!
SH1      !SIGYZI = 0.,0.!
SH1      !FMFAC = 1.! !END!
VETK351  !SRCNAM  = VETK351 !
VETK351  !X =   252.436,  -1333.192,  14.32927, 7.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0001070982!
VETK351  !SIGYZI = 0.,0.!
VETK351  !FMFAC = 1.! !END!
BD1      !SRCNAM  = BD1     !
BD1      !X =   267.855,  -1355.765,  48.78049, 4.18,  4.57317,  17.31707,
391.33333,  0.0,  0.0001049983!
BD1      !SIGYZI = 0.,0.!
BD1      !FMFAC = 1.! !END!
VETK54   !SRCNAM  = VETK54  !
VETK54   !X =   254.201,  -1333.136,  12.80488, 10.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0891420561!
VETK54   !SIGYZI = 0.,0.!
VETK54   !FMFAC = 1.! !END!
VW62     !SRCNAM  = VW62    !
VW62     !X =   249.788,  -1332.369,  14.63415, 4.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0800246578!
VW62     !SIGYZI = 0.,0.!
VW62     !FMFAC = 1.! !END!
CE707    !SRCNAM  = CE707   !
CE707    !X =   255.610,  -1333.183,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0762993719!
CE707    !SIGYZI = 0.,0.!
CE707    !FMFAC = 1.! !END!
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CE708    !SRCNAM  = CE708   !
CE708    !X =   255.584,  -1333.215,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0751610857!
CE708    !SIGYZI = 0.,0.!
CE708    !FMFAC = 1.! !END!
FWZ4     !SRCNAM  = FWZ4    !
FWZ4     !X =   245.524,  -1331.066,  12.19512, 15.00,  3.35366,  20.12195,
394.11111,  0.0,  0.0728821614!
FWZ4     !SIGYZI = 0.,0.!
FWZ4     !FMFAC = 1.! !END!
VETK53   !SRCNAM  = VETK53  !
VETK53   !X =   254.160,  -1333.573,  12.80488, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0630121776!
VETK53   !SIGYZI = 0.,0.!
VETK53   !FMFAC = 1.! !END!
CE697    !SRCNAM  = CE697   !
CE697    !X =   255.692,  -1333.149,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0608118445!
CE697    !SIGYZI = 0.,0.!
CE697    !FMFAC = 1.! !END!
SA70     !SRCNAM  = SA70    !
SA70     !X =   272.085,  -1324.054,  9.14634, 6.00,  1.82927,  23.47561,
413.00000,  0.0,  0.0513031072!
SA70     !SIGYZI = 0.,0.!
SA70     !FMFAC = 1.! !END!
VW91     !SRCNAM  = VW91    !
VW91     !X =   249.380,  -1332.601,  15.24390, 4.08,  0.91463,  0.00305,
298.55556,  0.0,  0.0497867223!
VW91     !SIGYZI = 0.,0.!
VW91     !FMFAC = 1.! !END!
VETK151  !SRCNAM  = VETK151 !
VETK151  !X =   254.577,  -1332.811,  12.50000, 9.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0469054859!
VETK151  !SIGYZI = 0.,0.!
VETK151  !FMFAC = 1.! !END!
VETK71   !SRCNAM  = VETK71  !
VETK71   !X =   254.093,  -1333.232,  10.67073, 11.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0462382955!
VETK71   !SIGYZI = 0.,0.!
VETK71   !FMFAC = 1.! !END!
CE698    !SRCNAM  = CE698   !
CE698    !X =   255.693,  -1333.181,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0451173550!
CE698    !SIGYZI = 0.,0.!
CE698    !FMFAC = 1.! !END!
VW89     !SRCNAM  = VW89    !
VW89     !X =   249.406,  -1332.538,  15.24390, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0434413202!
VW89     !SIGYZI = 0.,0.!
VW89     !FMFAC = 1.! !END!
CE454    !SRCNAM  = CE454   !
CE454    !X =   255.965,  -1333.047,  9.14634, 7.78,  0.91463,  0.00305,
298.55556,  0.0,  0.0419616427!
CE454    !SIGYZI = 0.,0.!
CE454    !FMFAC = 1.! !END!
VETK81   !SRCNAM  = VETK81  !
VETK81   !X =   254.063,  -1333.108,  14.63415, 10.56,  0.91463,  0.00305,
295.22222,  0.0,  0.0406231248!
VETK81   !SIGYZI = 0.,0.!
VETK81   !FMFAC = 1.! !END!
VETK153  !SRCNAM  = VETK153 !
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VETK153  !X =   254.603,  -1332.779,  12.19512, 8.86,  0.91463,  0.00305,
295.22222,  0.0,  0.0365148262!
VETK153  !SIGYZI = 0.,0.!
VETK153  !FMFAC = 1.! !END!
CE694    !SRCNAM  = CE694   !
CE694    !X =   255.639,  -1333.213,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0329411893!
CE694    !SIGYZI = 0.,0.!
CE694    !FMFAC = 1.! !END!
FWFB3045 !SRCNAM  = FWFB3045!
FWFB3045 !X =   243.853,  -1330.587,  14.63415, 14.00,  0.91463,  0.00305,
301.05556,  0.0,  0.0318978951!
FWFB3045 !SIGYZI = 0.,0.!
FWFB3045 !FMFAC = 1.! !END!
CE695    !SRCNAM  = CE695   !
CE695    !X =   255.667,  -1333.213,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0318718870!
CE695    !SIGYZI = 0.,0.!
CE695    !FMFAC = 1.! !END!
VETK70   !SRCNAM  = VETK70  !
VETK70   !X =   254.117,  -1333.106,  14.93902, 10.55,  0.91463,  0.00305,
295.22222,  0.0,  0.0285297503!
VETK70   !SIGYZI = 0.,0.!
VETK70   !FMFAC = 1.! !END!
VW13     !SRCNAM  = VW13    !
VW13     !X =   249.542,  -1332.470,  17.07317, 4.25,  0.91463,  0.00305,
298.55556,  0.0,  0.0270806692!
VW13     !SIGYZI = 0.,0.!
VW13     !FMFAC = 1.! !END!
VW182    !SRCNAM  = VW182   !
VW182    !X =   249.902,  -1332.490,  14.63415, 4.58,  0.91463,  0.00305,
296.33333,  0.0,  0.0263363155!
VW182    !SIGYZI = 0.,0.!
VW182    !FMFAC = 1.! !END!
FWA203   !SRCNAM  = FWA203  !
FWA203   !X =   244.996,  -1330.958,  64.02439, 14.68,  3.65854,  5.27439,
421.88889,  0.0,  0.0256049291!
FWA203   !SIGYZI = 0.,0.!
FWA203   !FMFAC = 1.! !END!
CW553FUG !SRCNAM  = CW553FUG!
CW553FUG !X =   248.963,  -1333.363,  3.04878, 8.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0252902388!
CW553FUG !SIGYZI = 0.,0.!
CW553FUG !FMFAC = 1.! !END!
FWFB3046 !SRCNAM  = FWFB3046!
FWFB3046 !X =   243.854,  -1330.619,  14.63415, 14.00,  0.91463,  0.00305,
300.81667,  0.0,  0.0224491853!
FWFB3046 !SIGYZI = 0.,0.!
FWFB3046 !FMFAC = 1.! !END!
COFUG    !SRCNAM  = COFUG   !
COFUG    !X =   255.353,  -1332.879,  0.91463, 7.46,  0.01000,  0.01000,
294.00000,  0.0,  0.0195217812!
COFUG    !SIGYZI = 0.,0.!
COFUG    !FMFAC = 1.! !END!
VETK86   !SRCNAM  = VETK86  !
VETK86   !X =   253.795,  -1333.366,  9.14634, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0193265579!
VETK86   !SIGYZI = 0.,0.!
VETK86   !FMFAC = 1.! !END!
VW169    !SRCNAM  = VW169   !
VW169    !X =   249.293,  -1332.448,  16.46341, 4.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0182718399!
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VW169    !SIGYZI = 0.,0.!
VW169    !FMFAC = 1.! !END!
VETK55   !SRCNAM  = VETK55  !
VETK55   !X =   254.176,  -1333.198,  12.80488, 11.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0167314104!
VETK55   !SIGYZI = 0.,0.!
VETK55   !FMFAC = 1.! !END!
CWAPI1   !SRCNAM  = CWAPI1  !
CWAPI1   !X =   248.318,  -1333.040,  3.04878, 4.99,  0.01000,  0.01000,
294.00000,  0.0,  0.0160099253!
CWAPI1   !SIGYZI = 0.,0.!
CWAPI1   !FMFAC = 1.! !END!
CW585T64 !SRCNAM  = CW585T64!
CW585T64 !X =   249.102,  -1333.390,  9.14634, 8.91,  0.91463,  0.00305,
299.66667,  0.0,  0.0153840516!
CW585T64 !SIGYZI = 0.,0.!
CW585T64 !FMFAC = 1.! !END!
CW585T63 !SRCNAM  = CW585T63!
CW585T63 !X =   249.102,  -1333.390,  9.14634, 8.91,  0.91463,  0.00305,
298.00000,  0.0,  0.0153150678!
CW585T63 !SIGYZI = 0.,0.!
CW585T63 !FMFAC = 1.! !END!
FWN103   !SRCNAM  = FWN103  !
FWN103   !X =   245.918,  -1331.303,  45.73171, 12.18,  1.52439,  16.46341,
421.88889,  0.0,  0.0137180232!
FWN103   !SIGYZI = 0.,0.!
FWN103   !FMFAC = 1.! !END!
CE459    !SRCNAM  = CE459   !
CE459    !X =   255.965,  -1333.047,  3.65854, 7.78,  1.82927,  0.00305,
298.55556,  0.0,  0.0136960050!
CE459    !SIGYZI = 0.,0.!
CE459    !FMFAC = 1.! !END!
FE94     !SRCNAM  = FE94    !
FE94     !X =   255.689,  -1333.899,  30.48780, 9.00,  2.53049,  6.40244,
424.66667,  0.0,  0.0133390319!
FE94     !SIGYZI = 0.,0.!
FE94     !FMFAC = 1.! !END!
CE469    !SRCNAM  = CE469   !
CE469    !X =   255.909,  -1333.017,  6.09756, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0131835505!
CE469    !SIGYZI = 0.,0.!
CE469    !FMFAC = 1.! !END!
CE470    !SRCNAM  = CE470   !
CE470    !X =   255.909,  -1333.017,  6.09756, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0131322484!
CE470    !SIGYZI = 0.,0.!
CE470    !FMFAC = 1.! !END!
CE696    !SRCNAM  = CE696   !
CE696    !X =   255.666,  -1333.182,  12.19512, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0131074898!
CE696    !SIGYZI = 0.,0.!
CE696    !FMFAC = 1.! !END!
SA80     !SRCNAM  = SA80    !
SA80     !X =   272.085,  -1324.054,  9.14634, 6.00,  1.82927,  23.47561,
413.00000,  0.0,  0.0130454148!
SA80     !SIGYZI = 0.,0.!
SA80     !FMFAC = 1.! !END!
CE714    !SRCNAM  = CE714   !
CE714    !X =   255.696,  -1333.273,  14.63415, 8.00,  0.91463,  0.00305,
304.66667,  0.0,  0.0124653834!
CE714    !SIGYZI = 0.,0.!
CE714    !FMFAC = 1.! !END!
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VW162    !SRCNAM  = VW162   !
VW162    !X =   250.274,  -1332.917,  74.69512, 8.26,  2.59146,  10.79268,
449.66667,  0.0,  0.0213666637!
VW162    !SIGYZI = 0.,0.!
VW162    !FMFAC = 1.! !END!
CE666    !SRCNAM  = CE666   !
CE666    !X =   255.919,  -1333.330,  14.63415, 8.46,  0.91463,  0.00305,
298.55556,  0.0,  0.0122230369!
CE666    !SIGYZI = 0.,0.!
CE666    !FMFAC = 1.! !END!
TP117CT1 !SRCNAM  = TP117CT1!
TP117CT1 !X =   217.292,  -1361.364,  0.91463, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0115454621!
TP117CT1 !SIGYZI = 0.,0.!
TP117CT1 !FMFAC = 1.! !END!
FE65A    !SRCNAM  = FE65A   !
FE65A    !X =   255.851,  -1333.799,  45.73171, 9.00,  2.71951,  4.60366,
505.22222,  0.0,  0.0106640017!
FE65A    !SIGYZI = 0.,0.!
FE65A    !FMFAC = 1.! !END!
VW163    !SRCNAM  = VW163   !
VW163    !X =   250.210,  -1332.668,  0.30488, 6.44,  0.30488,  14.02439,
477.44444,  0.0,  0.0106012967!
VW163    !SIGYZI = 0.,0.!
VW163    !FMFAC = 1.! !END!
VW118    !SRCNAM  = VW118   !
VW118    !X =   249.799,  -1332.712,  45.73171, 6.07,  3.96341,  9.14634,
449.66667,  0.0,  0.0170255210!
VW118    !SIGYZI = 0.,0.!
VW118    !FMFAC = 1.! !END!
FWD3     !SRCNAM  = FWD3    !
FWD3     !X =   245.938,  -1331.085,  30.48780, 13.44,  2.74390,  6.54878,
421.88889,  0.0,  0.0101309990!
FWD3     !SIGYZI = 0.,0.!
FWD3     !FMFAC = 1.! !END!
FWLSGHTR !SRCNAM  = FWLSGHTR!
FWLSGHTR !X =   244.944,  -1331.052,  53.35366, 15.00,  3.35366,  0.01000,
310.77778,  0.0,  0.0100306731!
FWLSGHTR !SIGYZI = 0.,0.!
FWLSGHTR !FMFAC = 1.! !END!
TP131COO !SRCNAM  = TP131COO!
TP131COO !X =   217.355,  -1361.675,  6.09756, 16.06,  0.30488,  9.14634,
305.22222,  0.0,  0.0098961074!
TP131COO !SIGYZI = 0.,0.!
TP131COO !FMFAC = 1.! !END!
VW133    !SRCNAM  = VW133   !
VW133    !X =   250.185,  -1332.700,  30.48780, 6.91,  2.43902,  9.87805,
388.55556,  0.0,  0.0098735642!
VW133    !SIGYZI = 0.,0.!
VW133    !FMFAC = 1.! !END!
FBCPSTV1 !SRCNAM  = FBCPSTV1!
FBCPSTV1 !X =   270.345,  -1349.996,  4.87805, 4.00,  0.91463,  0.00305,
305.22222,  0.0,  0.0195059265!
FBCPSTV1 !SIGYZI = 0.,0.!
FBCPSTV1 !FMFAC = 1.! !END!
CW585TK6 !SRCNAM  = CW585TK6!
CW585TK6 !X =   249.047,  -1333.392,  6.40244, 8.91,  0.91463,  0.00305,
304.11111,  0.0,  0.0094511877!
CW585TK6 !SIGYZI = 0.,0.!
CW585TK6 !FMFAC = 1.! !END!
CE468    !SRCNAM  = CE468   !
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CE468    !X =   255.909,  -1333.017,  6.09756, 8.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0090284227!
CE468    !SIGYZI = 0.,0.!
CE468    !FMFAC = 1.! !END!
CE471    !SRCNAM  = CE471   !
CE471    !X =   255.936,  -1333.017,  6.09756, 7.89,  0.91463,  0.00305,
298.55556,  0.0,  0.0089771206!
CE471    !SIGYZI = 0.,0.!
CE471    !FMFAC = 1.! !END!
VW165    !SRCNAM  = VW165   !
VW165    !X =   249.273,  -1332.667,  18.90244, 4.00,  0.91463,  0.00305,
294.11111,  0.0,  0.0089211355!
VW165    !SIGYZI = 0.,0.!
VW165    !FMFAC = 1.! !END!
VW31F    !SRCNAM  = VW31F   !
VW31F    !X =   250.020,  -1332.736,  4.57317, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0087887747!
VW31F    !SIGYZI = 0.,0.!
VW31F    !FMFAC = 1.! !END!
VW164    !SRCNAM  = VW164   !
VW164    !X =   249.299,  -1332.634,  18.90244, 4.00,  0.91463,  0.00305,
294.66667,  0.0,  0.0085978248!
VW164    !SIGYZI = 0.,0.!
VW164    !FMFAC = 1.! !END!
EQ1M     !SRCNAM  = EQ1M    !
EQ1M     !X =   238.982,  -1333.762,  39.63415, 18.00,  1.29573,  7.93902,
449.66667,  0.0,  0.0085955359!
EQ1M     !SIGYZI = 0.,0.!
EQ1M     !FMFAC = 1.! !END!
FWFB3047 !SRCNAM  = FWFB3047!
FWFB3047 !X =   243.881,  -1330.586,  14.63415, 14.00,  0.91463,  0.00305,
298.29444,  0.0,  0.0083739370!
FWFB3047 !SIGYZI = 0.,0.!
FWFB3047 !FMFAC = 1.! !END!
VW152    !SRCNAM  = VW152   !
VW152    !X =   249.749,  -1332.933,  81.70732, 8.00,  3.35366,  5.79268,
449.66667,  0.0,  0.0260726964!
VW152    !SIGYZI = 0.,0.!
VW152    !FMFAC = 1.! !END!
VL59     !SRCNAM  = VL59    !
VL59     !X =   249.428,  -1332.317,  16.46341, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0083155580!
VL59     !SIGYZI = 0.,0.!
VL59     !FMFAC = 1.! !END!
VETK52   !SRCNAM  = VETK52  !
VETK52   !X =   254.186,  -1333.509,  12.80488, 12.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0080486839!
VETK52   !SIGYZI = 0.,0.!
VETK52   !FMFAC = 1.! !END!
TP121CT1 !SRCNAM  = TP121CT1!
TP121CT1 !X =   216.892,  -1361.970,  0.91463, 16.06,  0.01000,  0.01000,
294.00000,  0.0,  0.0076969712!
TP121CT1 !SIGYZI = 0.,0.!
TP121CT1 !FMFAC = 1.! !END!
EQ1N     !SRCNAM  = EQ1N    !
EQ1N     !X =   238.955,  -1333.794,  39.63415, 18.00,  1.29573,  7.93902,
449.66667,  0.0,  0.0075694193!
EQ1N     !SIGYZI = 0.,0.!
EQ1N     !FMFAC = 1.! !END!
VE8H4    !SRCNAM  = VE8H4   !
VE8H4    !X =   253.732,  -1333.150,  30.48780, 11.11,  2.59146,  5.22561,
598.00000,  0.0,  0.0074963511!
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VE8H4    !SIGYZI = 0.,0.!
VE8H4    !FMFAC = 1.! !END!
FWA204   !SRCNAM  = FWA204  !
FWA204   !X =   244.995,  -1330.926,  53.35366, 14.41,  1.52439,  9.32927,
421.88889,  0.0,  0.0072492691!
FWA204   !SIGYZI = 0.,0.!
FWA204   !FMFAC = 1.! !END!
VL14     !SRCNAM  = VL14    !
VL14     !X =   249.568,  -1332.408,  12.19512, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0070352407!
VL14     !SIGYZI = 0.,0.!
VL14     !FMFAC = 1.! !END!
VW153    !SRCNAM  = VW153   !
VW153    !X =   250.129,  -1332.702,  15.24390, 6.92,  2.43902,  6.40244,
449.66667,  0.0,  0.0070248563!
VW153    !SIGYZI = 0.,0.!
VW153    !FMFAC = 1.! !END!
FEFL125  !SRCNAM  = FEFL125 !
FEFL125  !X =   256.240,  -1333.007,  9.14634, 7.00,  1.25915,  5.67073,
580.77778,  0.0,  0.0121334314!
FEFL125  !SIGYZI = 0.,0.!
FEFL125  !FMFAC = 1.! !END!
CEF3720  !SRCNAM  = CEF3720 !
CEF3720  !X =   255.590,  -1333.402,  4.57317, 8.69,  0.01000,  0.01000,
294.00000,  0.0,  0.0068832032!
CEF3720  !SIGYZI = 0.,0.!
CEF3720  !FMFAC = 1.! !END!
EQ1E     !SRCNAM  = EQ1E    !
EQ1E     !X =   238.978,  -1333.637,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0067676106!
EQ1E     !SIGYZI = 0.,0.!
EQ1E     !FMFAC = 1.! !END!
VW1      !SRCNAM  = VW1     !
VW1      !X =   249.409,  -1332.631,  30.48780, 4.44,  1.76829,  7.50000,
616.33333,  0.0,  0.0067277638!
VW1      !SIGYZI = 0.,0.!
VW1      !FMFAC = 1.! !END!
EQ1D     !SRCNAM  = EQ1D    !
EQ1D     !X =   238.978,  -1333.637,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0066864784!
EQ1D     !SIGYZI = 0.,0.!
EQ1D     !FMFAC = 1.! !END!
CEF244   !SRCNAM  = CEF244  !
CEF244   !X =   255.562,  -1333.373,  4.57317, 8.43,  0.01000,  0.01000,
294.00000,  0.0,  0.0066432192!
CEF244   !SIGYZI = 0.,0.!
CEF244   !FMFAC = 1.! !END!
EQ1G     !SRCNAM  = EQ1G    !
EQ1G     !X =   238.980,  -1333.701,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0065576141!
EQ1G     !SIGYZI = 0.,0.!
EQ1G     !FMFAC = 1.! !END!
EQ1C     !SRCNAM  = EQ1C    !
EQ1C     !X =   238.978,  -1333.637,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0063762611!
EQ1C     !SIGYZI = 0.,0.!
EQ1C     !FMFAC = 1.! !END!
FE110    !SRCNAM  = FE110   !
FE110    !X =   255.987,  -1333.733,  60.97561, 8.93,  2.74390,  2.73780,
521.88889,  0.0,  0.0063101122!
FE110    !SIGYZI = 0.,0.!
FE110    !FMFAC = 1.! !END!
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VW34     !SRCNAM  = VW34    !
VW34     !X =   249.519,  -1332.627,  17.07317, 4.98,  0.91463,  0.00305,
298.55556,  0.0,  0.0062613510!
VW34     !SIGYZI = 0.,0.!
VW34     !FMFAC = 1.! !END!
EQ1B     !SRCNAM  = EQ1B    !
EQ1B     !X =   238.978,  -1333.637,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0062426193!
EQ1B     !SIGYZI = 0.,0.!
EQ1B     !FMFAC = 1.! !END!
VW35     !SRCNAM  = VW35    !
VW35     !X =   249.518,  -1332.596,  12.19512, 4.92,  0.91463,  0.00305,
298.00000,  0.0,  0.0061449499!
VW35     !SIGYZI = 0.,0.!
VW35     !FMFAC = 1.! !END!
CEF411   !SRCNAM  = CEF411  !
CEF411   !X =   255.222,  -1333.132,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0061081270!
CEF411   !SIGYZI = 0.,0.!
CEF411   !FMFAC = 1.! !END!
CE262    !SRCNAM  = CE262   !
CE262    !X =   255.509,  -1333.467,  41.76829, 8.89,  1.44817,  10.00000,
430.22222,  0.0,  0.0061042211!
CE262    !SIGYZI = 0.,0.!
CE262    !FMFAC = 1.! !END!
VE39H3A  !SRCNAM  = VE39H3A !
VE39H3A  !X =   253.624,  -1333.216,  46.34146, 11.00,  2.37805,  3.71646,
554.11111,  0.0,  0.0060851744!
VE39H3A  !SIGYZI = 0.,0.!
VE39H3A  !FMFAC = 1.! !END!
CE664    !SRCNAM  = CE664   !
CE664    !X =   255.889,  -1333.236,  12.19512, 8.53,  0.91463,  0.00305,
298.55556,  0.0,  0.0060849854!
CE664    !SIGYZI = 0.,0.!
CE664    !FMFAC = 1.! !END!
TPTF25   !SRCNAM  = TPTF25  !
TPTF25   !X =   216.645,  -1362.070,  3.04878, 16.87,  0.01000,  0.01000,
294.00000,  0.0,  0.0059478892!
TPTF25   !SIGYZI = 0.,0.!
TPTF25   !FMFAC = 1.! !END!
EQ23A    !SRCNAM  = EQ23A   !
EQ23A    !X =   239.195,  -1333.506,  9.75610, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0059376518!
EQ23A    !SIGYZI = 0.,0.!
EQ23A    !FMFAC = 1.! !END!
SA32     !SRCNAM  = SA32    !
SA32     !X =   271.923,  -1324.184,  0.30488, 6.00,  0.30488,  0.00305,
421.88889,  0.0,  0.0057323802!
SA32     !SIGYZI = 0.,0.!
SA32     !FMFAC = 1.! !END!
FWB1     !SRCNAM  = FWB1    !
FWB1     !X =   245.686,  -1330.968,  25.91463, 14.95,  1.21951,  13.35366,
580.77778,  0.0,  0.0056938144!
FWB1     !SIGYZI = 0.,0.!
FWB1     !FMFAC = 1.! !END!
EQ1J     !SRCNAM  = EQ1J    !
EQ1J     !X =   238.981,  -1333.732,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0056699063!
EQ1J     !SIGYZI = 0.,0.!
EQ1J     !FMFAC = 1.! !END!
CW585T66 !SRCNAM  = CW585T66!
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CW585T66 !X =   248.289,  -1333.010,  6.09756, 5.11,  0.91463,  0.00305,
299.66667,  0.0,  0.0056073903!
CW585T66 !SIGYZI = 0.,0.!
CW585T66 !FMFAC = 1.! !END!
TP324FLA !SRCNAM  = TP324FLA!
TP324FLA !X =   216.251,  -1361.801,  7.01220, 17.00,  0.10000,  0.01000,
977.44444,  0.0,  0.0054973101!
TP324FLA !SIGYZI = 0.,0.!
TP324FLA !FMFAC = 1.! !END!
EQ1F     !SRCNAM  = EQ1F    !
EQ1F     !X =   238.979,  -1333.669,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0054503654!
EQ1F     !SIGYZI = 0.,0.!
EQ1F     !FMFAC = 1.! !END!
FWAA3    !SRCNAM  = FWAA3   !
FWAA3    !X =   245.824,  -1330.963,  43.90244, 14.23,  1.82927,  4.75610,
421.88889,  0.0,  0.0053517090!
FWAA3    !SIGYZI = 0.,0.!
FWAA3    !FMFAC = 1.! !END!
CEF261   !SRCNAM  = CEF261  !
CEF261   !X =   255.564,  -1333.434,  6.09756, 8.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0053502495!
CEF261   !SIGYZI = 0.,0.!
CEF261   !FMFAC = 1.! !END!
CW585T68 !SRCNAM  = CW585T68!
CW585T68 !X =   248.345,  -1333.008,  7.62195, 4.80,  0.91463,  0.00305,
299.66667,  0.0,  0.0053420492!
CW585T68 !SIGYZI = 0.,0.!
CW585T68 !FMFAC = 1.! !END!
EQ1L     !SRCNAM  = EQ1L    !
EQ1L     !X =   239.044,  -1333.979,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0053167341!
EQ1L     !SIGYZI = 0.,0.!
EQ1L     !FMFAC = 1.! !END!
VETK332  !SRCNAM  = VETK332 !
VETK332  !X =   252.577,  -1333.280,  14.63415, 8.89,  1.00000,  0.00305,
295.22222,  0.0,  0.0053071477!
VETK332  !SIGYZI = 0.,0.!
VETK332  !FMFAC = 1.! !END!
VE7H2    !SRCNAM  = VE7H2   !
VE7H2    !X =   253.620,  -1333.091,  51.82927, 11.12,  2.59146,  3.95122,
446.88889,  0.0,  0.0052743988!
VE7H2    !SIGYZI = 0.,0.!
VE7H2    !FMFAC = 1.! !END!
VETK213  !SRCNAM  = VETK213 !
VETK213  !X =   254.576,  -1332.780,  7.31707, 9.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0051491779!
VETK213  !SIGYZI = 0.,0.!
VETK213  !FMFAC = 1.! !END!
CE252    !SRCNAM  = CE252   !
CE252    !X =   255.533,  -1333.342,  48.78049, 8.08,  3.04878,  9.60366,
449.66667,  0.0,  0.0050446941!
CE252    !SIGYZI = 0.,0.!
CE252    !FMFAC = 1.! !END!
EQ3B     !SRCNAM  = EQ3B    !
EQ3B     !X =   238.977,  -1333.608,  36.58537, 18.00,  1.09146,  4.71341,
433.00000,  0.0,  0.0050303723!
EQ3B     !SIGYZI = 0.,0.!
EQ3B     !FMFAC = 1.! !END!
EQ1A     !SRCNAM  = EQ1A    !
EQ1A     !X =   238.977,  -1333.608,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0050303723!
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EQ1A     !SIGYZI = 0.,0.!
EQ1A     !FMFAC = 1.! !END!
TP122CT1 !SRCNAM  = TP122CT1!
TP122CT1 !X =   216.693,  -1361.757,  0.91463, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0049480537!
TP122CT1 !SIGYZI = 0.,0.!
TP122CT1 !FMFAC = 1.! !END!
EQ1H     !SRCNAM  = EQ1H    !
EQ1H     !X =   238.981,  -1333.732,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0049301410!
EQ1H     !SIGYZI = 0.,0.!
EQ1H     !FMFAC = 1.! !END!
EQ1K     !SRCNAM  = EQ1K    !
EQ1K     !X =   238.982,  -1333.762,  39.63415, 18.00,  1.29573,  5.32317,
449.66667,  0.0,  0.0049253741!
EQ1K     !SIGYZI = 0.,0.!
EQ1K     !FMFAC = 1.! !END!
EQ17     !SRCNAM  = EQ17    !
EQ17     !X =   238.973,  -1333.481,  9.75610, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0048928351!
EQ17     !SIGYZI = 0.,0.!
EQ17     !FMFAC = 1.! !END!
EQ16     !SRCNAM  = EQ16    !
EQ16     !X =   238.972,  -1333.452,  9.75610, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0048859997!
EQ16     !SIGYZI = 0.,0.!
EQ16     !FMFAC = 1.! !END!
TPTOXCOO !SRCNAM  = TPTOXCOO!
TPTOXCOO !X =   217.607,  -1361.794,  10.67073, 16.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0047694831!
TPTOXCOO !SIGYZI = 0.,0.!
TPTOXCOO !FMFAC = 1.! !END!
VE39H3C  !SRCNAM  = VE39H3C !
VE39H3C  !X =   253.624,  -1333.216,  46.34146, 11.00,  2.37805,  3.71646,
554.11111,  0.0,  0.0054434460!
VE39H3C  !SIGYZI = 0.,0.!
VE39H3C  !FMFAC = 1.! !END!
CW527H2  !SRCNAM  = CW527H2 !
CW527H2  !X =   248.691,  -1333.496,  42.68293, 9.90,  1.58537,  5.18293,
488.00000,  0.0,  0.0046628784!
CW527H2  !SIGYZI = 0.,0.!
CW527H2  !FMFAC = 1.! !END!
VW69     !SRCNAM  = VW69    !
VW69     !X =   248.948,  -1332.895,  7.31707, 4.58,  0.91463,  0.00305,
298.00000,  0.0,  0.0046523576!
VW69     !SIGYZI = 0.,0.!
VW69     !FMFAC = 1.! !END!
EQ4C     !SRCNAM  = EQ4C    !
EQ4C     !X =   238.923,  -1333.609,  60.97561, 18.00,  3.50610,  19.42073,
435.77778,  0.0,  0.0046390123!
EQ4C     !SIGYZI = 0.,0.!
EQ4C     !FMFAC = 1.! !END!
FWR201   !SRCNAM  = FWR201  !
FWR201   !X =   244.807,  -1331.056,  53.35366, 14.59,  3.35366,  3.36280,
421.88889,  0.0,  0.0045862717!
FWR201   !SIGYZI = 0.,0.!
FWR201   !FMFAC = 1.! !END!
VW158    !SRCNAM  = VW158   !
VW158    !X =   249.555,  -1332.875,  2.74390, 7.08,  0.10000,  0.01000,
810.77778,  0.0,  0.0048105585!
VW158    !SIGYZI = 0.,0.!
VW158    !FMFAC = 1.! !END!
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EQ3A     !SRCNAM  = EQ3A    !
EQ3A     !X =   238.976,  -1333.576,  36.58537, 18.00,  1.09146,  4.71341,
433.00000,  0.0,  0.0045435584!
EQ3A     !SIGYZI = 0.,0.!
EQ3A     !FMFAC = 1.! !END!
VW150    !SRCNAM  = VW150   !
VW150    !X =   249.969,  -1332.894,  45.42683, 7.91,  2.13415,  7.31707,
449.66667,  0.0,  0.0090107620!
VW150    !SIGYZI = 0.,0.!
VW150    !FMFAC = 1.! !END!
FWN104   !SRCNAM  = FWN104  !
FWN104   !X =   245.731,  -1331.529,  45.73171, 14.52,  1.52439,  20.42683,
421.88889,  0.0,  0.0043639693!
FWN104   !SIGYZI = 0.,0.!
FWN104   !FMFAC = 1.! !END!
EQ44A    !SRCNAM  = EQ44A   !
EQ44A    !X =   238.814,  -1333.706,  22.86585, 18.00,  3.42988,  19.81707,
449.66667,  0.0,  0.0043431062!
EQ44A    !SIGYZI = 0.,0.!
EQ44A    !FMFAC = 1.! !END!
FEFWPENG !SRCNAM  = FEFWPENG!
FEFWPENG !X =   256.242,  -1333.070,  1.82927, 7.00,  0.04878,  2.92683,
644.11111,  0.0,  0.0043082888!
FEFWPENG !SIGYZI = 0.,0.!
FEFWPENG !FMFAC = 1.! !END!
VW64     !SRCNAM  = VW64    !
VW64     !X =   249.705,  -1332.372,  14.63415, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0042646200!
VW64     !SIGYZI = 0.,0.!
VW64     !FMFAC = 1.! !END!
CE082    !SRCNAM  = CE082   !
CE082    !X =   256.120,  -1333.572,  45.73171, 8.00,  2.28659,  5.79268,
580.77778,  0.0,  0.0042572071!
CE082    !SIGYZI = 0.,0.!
CE082    !FMFAC = 1.! !END!
CEF264   !SRCNAM  = CEF264  !
CEF264   !X =   255.476,  -1333.312,  11.89024, 8.11,  7.92683,  7.92683,
309.66667,  0.0,  0.0042444498!
CEF264   !SIGYZI = 0.,0.!
CEF264   !FMFAC = 1.! !END!
VE88CT7  !SRCNAM  = VE88CT7 !
VE88CT7  !X =   253.730,  -1333.087,  12.19512, 11.78,  6.09756,  9.14634,
294.11111,  0.0,  0.0042397774!
VE88CT7  !SIGYZI = 0.,0.!
VE88CT7  !FMFAC = 1.! !END!
FWAA18   !SRCNAM  = FWAA18  !
FWAA18   !X =   245.798,  -1330.964,  38.10976, 14.50,  1.52439,  6.06707,
514.11111,  0.0,  0.0041794559!
FWAA18   !SIGYZI = 0.,0.!
FWAA18   !FMFAC = 1.! !END!
VW74     !SRCNAM  = VW74    !
VW74     !X =   249.439,  -1332.692,  30.48780, 5.29,  1.82927,  7.95732,
580.77778,  0.0,  0.0041785004!
VW74     !SIGYZI = 0.,0.!
VW74     !FMFAC = 1.! !END!
VW167CT  !SRCNAM  = VW167CT !
VW167CT  !X =   250.433,  -1332.692,  32.01220, 5.09,  4.57317,  9.14634,
309.66667,  0.0,  0.0041155960!
VW167CT  !SIGYZI = 0.,0.!
VW167CT  !FMFAC = 1.! !END!
SA29     !SRCNAM  = SA29    !
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SA29     !X =   272.007,  -1324.212,  18.29268, 6.00,  0.91463,  9.14634,
366.33333,  0.0,  0.0040269249!
SA29     !SIGYZI = 0.,0.!
SA29     !FMFAC = 1.! !END!
FWN3     !SRCNAM  = FWN3    !
FWN3     !X =   245.750,  -1331.247,  30.48780, 15.00,  1.52439,  6.37195,
421.88889,  0.0,  0.0068262206!
FWN3     !SIGYZI = 0.,0.!
FWN3     !FMFAC = 1.! !END!
EQ4A     !SRCNAM  = EQ4A    !
EQ4A     !X =   238.923,  -1333.609,  60.97561, 18.00,  3.50610,  1.98171,
435.77778,  0.0,  0.0039994784!
EQ4A     !SIGYZI = 0.,0.!
EQ4A     !FMFAC = 1.! !END!
FWM5     !SRCNAM  = FWM5    !
FWM5     !X =   245.720,  -1331.185,  30.48780, 15.00,  1.52439,  15.39634,
421.88889,  0.0,  0.0130838337!
FWM5     !SIGYZI = 0.,0.!
FWM5     !FMFAC = 1.! !END!
DP245    !SRCNAM  = DP245   !
DP245    !X =   273.276,  -1325.012,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0039296440!
DP245    !SIGYZI = 0.,0.!
DP245    !FMFAC = 1.! !END!
VW8      !SRCNAM  = VW8     !
VW8      !X =   249.491,  -1332.597,  17.07317, 4.78,  0.91463,  0.00305,
298.55556,  0.0,  0.0039060614!
VW8      !SIGYZI = 0.,0.!
VW8      !FMFAC = 1.! !END!
VW122    !SRCNAM  = VW122   !
VW122    !X =   250.125,  -1332.577,  1.00000, 5.58,  0.10000,  0.01000,
294.00000,  0.0,  0.0038770399!
VW122    !SIGYZI = 0.,0.!
VW122    !FMFAC = 1.! !END!
VE44H1   !SRCNAM  = VE44H1  !
VE44H1   !X =   253.736,  -1333.274,  36.58537, 11.22,  2.28659,  4.96341,
494.11111,  0.0,  0.0038509583!
VE44H1   !SIGYZI = 0.,0.!
VE44H1   !FMFAC = 1.! !END!
VW46     !SRCNAM  = VW46    !
VW46     !X =   249.436,  -1332.599,  17.07317, 4.48,  0.91463,  0.00305,
298.55556,  0.0,  0.0038381380!
VW46     !SIGYZI = 0.,0.!
VW46     !FMFAC = 1.! !END!
EQ4B     !SRCNAM  = EQ4B    !
EQ4B     !X =   238.923,  -1333.609,  60.97561, 18.00,  3.50610,  19.42073,
435.77778,  0.0,  0.0037990262!
EQ4B     !SIGYZI = 0.,0.!
EQ4B     !FMFAC = 1.! !END!
EQ4D     !SRCNAM  = EQ4D    !
EQ4D     !X =   238.923,  -1333.609,  60.97561, 18.00,  3.65854,  19.51220,
435.77778,  0.0,  0.0037369827!
EQ4D     !SIGYZI = 0.,0.!
EQ4D     !FMFAC = 1.! !END!
VL83     !SRCNAM  = VL83    !
VL83     !X =   249.314,  -1333.134,  17.37805, 7.14,  0.91463,  0.00305,
298.00000,  0.0,  0.0037229864!
VL83     !SIGYZI = 0.,0.!
VL83     !FMFAC = 1.! !END!
EQBX0012 !SRCNAM  = EQBX0012!
EQBX0012 !X =   239.217,  -1334.255,  36.58537, 17.32,  0.10000,  0.01000,
810.77778,  0.0,  0.0035318791!
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EQBX0012 !SIGYZI = 0.,0.!
EQBX0012 !FMFAC = 1.! !END!
FWFB24   !SRCNAM  = FWFB24  !
FWFB24   !X =   245.985,  -1330.803,  12.19512, 13.90,  0.91463,  0.00305,
296.23889,  0.0,  0.0035291176!
FWFB24   !SIGYZI = 0.,0.!
FWFB24   !FMFAC = 1.! !END!
OCVCM9   !SRCNAM  = OCVCM9  !
OCVCM9   !X =   273.508,  -1324.535,  3.04878, 5.18,  0.01000,  0.01000,
294.00000,  0.0,  0.0034766605!
OCVCM9   !SIGYZI = 0.,0.!
OCVCM9   !FMFAC = 1.! !END!
VETK83   !SRCNAM  = VETK83  !
VETK83   !X =   254.091,  -1333.168,  14.63415, 11.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0033815951!
VETK83   !SIGYZI = 0.,0.!
VETK83   !FMFAC = 1.! !END!
VW63     !SRCNAM  = VW63    !
VW63     !X =   249.678,  -1332.404,  14.63415, 4.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0033729222!
VW63     !SIGYZI = 0.,0.!
VW63     !FMFAC = 1.! !END!
CE083    !SRCNAM  = CE083   !
CE083    !X =   256.120,  -1333.572,  45.73171, 8.00,  2.28659,  6.09756,
580.77778,  0.0,  0.0033169897!
CE083    !SIGYZI = 0.,0.!
CE083    !FMFAC = 1.! !END!
FWFB514  !SRCNAM  = FWFB514 !
FWFB514  !X =   245.173,  -1331.326,  12.19512, 15.11,  0.91463,  0.00305,
295.77778,  0.0,  0.0033127477!
FWFB514  !SIGYZI = 0.,0.!
FWFB514  !FMFAC = 1.! !END!
FWJJ4    !SRCNAM  = FWJJ4   !
FWJJ4    !X =   245.835,  -1331.306,  30.48780, 13.26,  1.21951,  20.60976,
438.55556,  0.0,  0.0051779894!
FWJJ4    !SIGYZI = 0.,0.!
FWJJ4    !FMFAC = 1.! !END!
VE39H3B  !SRCNAM  = VE39H3B !
VE39H3B  !X =   253.624,  -1333.216,  46.34146, 11.00,  2.37805,  3.71646,
554.11111,  0.0,  0.0032155718!
VE39H3B  !SIGYZI = 0.,0.!
VE39H3B  !FMFAC = 1.! !END!
FWFB512  !SRCNAM  = FWFB512 !
FWFB512  !X =   245.066,  -1331.392,  12.19512, 16.26,  0.91463,  0.00305,
297.61111,  0.0,  0.0031937427!
FWFB512  !SIGYZI = 0.,0.!
FWFB512  !FMFAC = 1.! !END!
VEQ10H1  !SRCNAM  = VEQ10H1 !
VEQ10H1  !X =   252.691,  -1333.401,  21.64634, 10.00,  1.62500,  16.96341,
491.33333,  0.0,  0.0031151305!
VEQ10H1  !SIGYZI = 0.,0.!
VEQ10H1  !FMFAC = 1.! !END!
VL143    !SRCNAM  = VL143   !
VL143    !X =   249.289,  -1333.196,  17.07317, 7.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0030812371!
VL143    !SIGYZI = 0.,0.!
VL143    !FMFAC = 1.! !END!
CE086    !SRCNAM  = CE086   !
CE086    !X =   256.122,  -1333.635,  30.18293, 8.00,  1.44817,  5.53049,
527.44444,  0.0,  0.0030783601!
CE086    !SIGYZI = 0.,0.!
CE086    !FMFAC = 1.! !END!
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VW172    !SRCNAM  = VW172   !
VW172    !X =   249.747,  -1332.869,  41.15854, 7.57,  1.37195,  6.09756,
477.44444,  0.0,  0.0030777406!
VW172    !SIGYZI = 0.,0.!
VW172    !FMFAC = 1.! !END!
VL176    !SRCNAM  = VL176   !
VL176    !X =   249.318,  -1333.258,  17.37805, 8.21,  0.91463,  0.00305,
294.00000,  0.0,  0.0030522260!
VL176    !SIGYZI = 0.,0.!
VL176    !FMFAC = 1.! !END!
FWO10    !SRCNAM  = FWO10   !
FWO10    !X =   245.473,  -1331.192,  30.48780, 15.00,  1.52439,  8.14024,
421.88889,  0.0,  0.0044548348!
FWO10    !SIGYZI = 0.,0.!
FWO10    !FMFAC = 1.! !END!
FWAA2    !SRCNAM  = FWAA2   !
FWAA2    !X =   245.883,  -1331.086,  17.68293, 13.87,  1.82927,  3.93293,
616.33333,  0.0,  0.0027615488!
FWAA2    !SIGYZI = 0.,0.!
FWAA2    !FMFAC = 1.! !END!
FWFB513  !SRCNAM  = FWFB513 !
FWFB513  !X =   245.148,  -1331.422,  12.19512, 16.13,  0.91463,  0.00305,
297.91111,  0.0,  0.0027167041!
FWFB513  !SIGYZI = 0.,0.!
FWFB513  !FMFAC = 1.! !END!
FBLOAD1  !SRCNAM  = FBLOAD1 !
FBLOAD1  !X =   270.344,  -1349.964,  6.09756, 4.00,  0.91463,  0.03049,
298.00000,  0.0,  0.0026757548!
FBLOAD1  !SIGYZI = 0.,0.!
FBLOAD1  !FMFAC = 1.! !END!
CEF3700  !SRCNAM  = CEF3700 !
CEF3700  !X =   255.616,  -1333.371,  7.92683, 8.88,  3.35366,  8.84146,
307.44444,  0.0,  0.0026497152!
CEF3700  !SIGYZI = 0.,0.!
CEF3700  !FMFAC = 1.! !END!
CWH99    !SRCNAM  = CWH99   !
CWH99    !X =   248.771,  -1333.400,  73.47561, 8.91,  3.58232,  10.67988,
516.88889,  0.0,  0.0045433694!
CWH99    !SIGYZI = 0.,0.!
CWH99    !FMFAC = 1.! !END!
VETK208  !SRCNAM  = VETK208 !
VETK208  !X =   254.598,  -1332.623,  8.84146, 7.56,  0.91463,  0.00305,
295.22222,  0.0,  0.0026215022!
VETK208  !SIGYZI = 0.,0.!
VETK208  !FMFAC = 1.! !END!
VE8H6    !SRCNAM  = VE8H6   !
VE8H6    !X =   253.760,  -1333.150,  43.29268, 11.10,  3.20122,  4.34451,
578.00000,  0.0,  0.0026156433!
VE8H6    !SIGYZI = 0.,0.!
VE8H6    !FMFAC = 1.! !END!
AL2      !SRCNAM  = AL2     !
AL2      !X =   250.473,  -1333.098,  4.57317, 9.25,  0.01000,  0.01000,
294.00000,  0.0,  0.0025902022!
AL2      !SIGYZI = 0.,0.!
AL2      !FMFAC = 1.! !END!
VL38     !SRCNAM  = VL38    !
VL38     !X =   249.622,  -1332.374,  17.07317, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0025560462!
VL38     !SIGYZI = 0.,0.!
VL38     !FMFAC = 1.! !END!
SA12     !SRCNAM  = SA12    !
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SA12     !X =   271.979,  -1324.213,  18.29268, 6.00,  0.91463,  9.14634,
366.33333,  0.0,  0.0025557102!
SA12     !SIGYZI = 0.,0.!
SA12     !FMFAC = 1.! !END!
FWN104B  !SRCNAM  = FWN104B !
FWN104B  !X =   245.763,  -1331.652,  45.73171, 15.00,  1.52439,  20.42683,
421.88889,  0.0,  0.0025484969!
FWN104B  !SIGYZI = 0.,0.!
FWN104B  !FMFAC = 1.! !END!
CEF224   !SRCNAM  = CEF224  !
CEF224   !X =   256.497,  -1333.279,  11.89024, 8.00,  4.26829,  8.23171,
302.44444,  0.0,  0.0024779695!
CEF224   !SIGYZI = 0.,0.!
CEF224   !FMFAC = 1.! !END!
VEPMALOA !SRCNAM  = VEPMALOA!
VEPMALOA !X =   253.985,  -1333.297,  3.04878, 11.54,  0.01000,  0.01000,
294.00000,  0.0,  0.0024759641!
VEPMALOA !SIGYZI = 0.,0.!
VEPMALOA !FMFAC = 1.! !END!
TP126COO !SRCNAM  = TP126COO!
TP126COO !X =   216.614,  -1361.915,  12.50000, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0024730661!
TP126COO !SIGYZI = 0.,0.!
TP126COO !FMFAC = 1.! !END!
TPSHCOOL !SRCNAM  = TPSHCOOL!
TPSHCOOL !X =   216.588,  -1361.979,  12.19512, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0024730661!
TPSHCOOL !SIGYZI = 0.,0.!
TPSHCOOL !FMFAC = 1.! !END!
CE084    !SRCNAM  = CE084   !
CE084    !X =   256.092,  -1333.573,  45.73171, 8.00,  1.82927,  8.23171,
580.77778,  0.0,  0.0024722366!
CE084    !SIGYZI = 0.,0.!
CE084    !FMFAC = 1.! !END!
CW585T67 !SRCNAM  = CW585T67!
CW585T67 !X =   248.317,  -1333.009,  7.62195, 4.94,  0.91463,  0.00305,
299.66667,  0.0,  0.0024587548!
CW585T67 !SIGYZI = 0.,0.!
CW585T67 !FMFAC = 1.! !END!
VE44H2   !SRCNAM  = VE44H2  !
VE44H2   !X =   253.708,  -1333.275,  37.19512, 11.22,  0.60976,  4.75610,
598.00000,  0.0,  0.0024311403!
VE44H2   !SIGYZI = 0.,0.!
VE44H2   !FMFAC = 1.! !END!
VWENG72P !SRCNAM  = VWENG72P!
VWENG72P !X =   249.513,  -1332.441,  9.14634, 4.00,  0.15244,  3.04878,
588.55556,  0.0,  0.0023650964!
VWENG72P !SIGYZI = 0.,0.!
VWENG72P !FMFAC = 1.! !END!
FWMX1    !SRCNAM  = FWMX1   !
FWMX1    !X =   244.890,  -1331.086,  30.48780, 14.97,  1.21951,  9.78659,
421.88889,  0.0,  0.0023553526!
FWMX1    !SIGYZI = 0.,0.!
FWMX1    !FMFAC = 1.! !END!
EQ52     !SRCNAM  = EQ52    !
EQ52     !X =   239.012,  -1333.856,  12.19512, 18.00,  0.30488,  0.00305,
298.00000,  0.0,  0.0023469527!
EQ52     !SIGYZI = 0.,0.!
EQ52     !FMFAC = 1.! !END!
CW527H1  !SRCNAM  = CW527H1 !
CW527H1  !X =   248.774,  -1333.493,  40.24390, 9.90,  1.15854,  7.92683,
511.88889,  0.0,  0.0023385948!
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CW527H1  !SIGYZI = 0.,0.!
CW527H1  !FMFAC = 1.! !END!
CW585T65 !SRCNAM  = CW585T65!
CW585T65 !X =   248.881,  -1333.397,  6.09756, 8.91,  0.91463,  0.00305,
299.66667,  0.0,  0.0023172487!
CW585T65 !SIGYZI = 0.,0.!
CW585T65 !FMFAC = 1.! !END!
CE764    !SRCNAM  = CE764   !
CE764    !X =   255.540,  -1333.560,  12.19512, 8.98,  0.91463,  0.00305,
298.55556,  0.0,  0.0023110538!
CE764    !SIGYZI = 0.,0.!
CE764    !FMFAC = 1.! !END!
FE74     !SRCNAM  = FE74    !
FE74     !X =   255.795,  -1333.771,  30.18293, 9.00,  1.12805,  6.34146,
583.00000,  0.0,  0.0022968895!
FE74     !SIGYZI = 0.,0.!
FE74     !FMFAC = 1.! !END!
CW572T25 !SRCNAM  = CW572T25!
CW572T25 !X =   248.237,  -1333.104,  12.19512, 6.42,  0.91463,  0.00305,
305.22222,  0.0,  0.0022756274!
CW572T25 !SIGYZI = 0.,0.!
CW572T25 !FMFAC = 1.! !END!
CW572T24 !SRCNAM  = CW572T24!
CW572T24 !X =   248.235,  -1333.043,  12.19512, 5.79,  0.91463,  0.00305,
305.22222,  0.0,  0.0022756274!
CW572T24 !SIGYZI = 0.,0.!
CW572T24 !FMFAC = 1.! !END!
FE37     !SRCNAM  = FE37    !
FE37     !X =   255.795,  -1333.771,  15.54878, 9.00,  1.86890,  8.44512,
616.33333,  0.0,  0.0022522653!
FE37     !SIGYZI = 0.,0.!
FE37     !FMFAC = 1.! !END!
FE38     !SRCNAM  = FE38    !
FE38     !X =   255.795,  -1333.771,  15.54878, 9.00,  1.86890,  8.44512,
616.33333,  0.0,  0.0022522653!
FE38     !SIGYZI = 0.,0.!
FE38     !FMFAC = 1.! !END!
VETK325  !SRCNAM  = VETK325 !
VETK325  !X =   252.494,  -1333.283,  12.19512, 8.90,  0.91463,  0.00305,
295.22222,  0.0,  0.0022341321!
VETK325  !SIGYZI = 0.,0.!
VETK325  !FMFAC = 1.! !END!
CW552T1  !SRCNAM  = CW552T1 !
CW552T1  !X =   248.797,  -1333.368,  6.09756, 8.57,  0.91463,  0.00305,
299.66667,  0.0,  0.0022135524!
CW552T1  !SIGYZI = 0.,0.!
CW552T1  !FMFAC = 1.! !END!
CE874    !SRCNAM  = CE874   !
CE874    !X =   250.449,  -1333.223,  13.41463, 10.58,  0.91463,  0.00305,
298.55556,  0.0,  0.0022075780!
CE874    !SIGYZI = 0.,0.!
CE874    !FMFAC = 1.! !END!
VE39H2   !SRCNAM  = VE39H2  !
VE39H2   !X =   253.624,  -1333.216,  26.21951, 11.00,  1.37195,  4.29878,
574.66667,  0.0,  0.0022003856!
VE39H2   !SIGYZI = 0.,0.!
VE39H2   !FMFAC = 1.! !END!
VETK320  !SRCNAM  = VETK320 !
VETK320  !X =   252.494,  -1333.283,  12.19512, 8.90,  0.91463,  0.00305,
295.22222,  0.0,  0.0021875758!
VETK320  !SIGYZI = 0.,0.!
VETK320  !FMFAC = 1.! !END!
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VW49H91  !SRCNAM  = VW49H91 !
VW49H91  !X =   249.748,  -1332.900,  30.48780, 7.90,  1.82927,  8.95122,
505.22222,  0.0,  0.0021724141!
VW49H91  !SIGYZI = 0.,0.!
VW49H91  !FMFAC = 1.! !END!
VE39H7   !SRCNAM  = VE39H7  !
VE39H7   !X =   253.624,  -1333.216,  26.21951, 11.00,  1.37195,  4.92683,
574.66667,  0.0,  0.0021358117!
VE39H7   !SIGYZI = 0.,0.!
VE39H7   !FMFAC = 1.! !END!
VE39H1   !SRCNAM  = VE39H1  !
VE39H1   !X =   253.624,  -1333.216,  27.74390, 11.00,  1.37195,  7.07012,
598.00000,  0.0,  0.0020972878!
VE39H1   !SIGYZI = 0.,0.!
VE39H1   !FMFAC = 1.! !END!
CE102    !SRCNAM  = CE102   !
CE102    !X =   256.149,  -1333.603,  28.96341, 8.00,  1.29573,  5.25610,
599.66667,  0.0,  0.0020951879!
CE102    !SIGYZI = 0.,0.!
CE102    !FMFAC = 1.! !END!
EQ5A     !SRCNAM  = EQ5A    !
EQ5A     !X =   238.923,  -1333.639,  33.23171, 18.00,  1.14329,  4.40549,
444.11111,  0.0,  0.0020665548!
EQ5A     !SIGYZI = 0.,0.!
EQ5A     !FMFAC = 1.! !END!
FE35     !SRCNAM  = FE35    !
FE35     !X =   255.823,  -1333.770,  15.54878, 9.00,  1.86890,  8.29268,
560.77778,  0.0,  0.0020233165!
FE35     !SIGYZI = 0.,0.!
FE35     !FMFAC = 1.! !END!
FE36     !SRCNAM  = FE36    !
FE36     !X =   255.823,  -1333.770,  15.54878, 9.00,  1.86890,  8.29268,
560.77778,  0.0,  0.0020233165!
FE36     !SIGYZI = 0.,0.!
FE36     !FMFAC = 1.! !END!
EQ5B     !SRCNAM  = EQ5B    !
EQ5B     !X =   238.924,  -1333.671,  33.23171, 18.00,  1.14329,  4.40549,
444.11111,  0.0,  0.0020045114!
EQ5B     !SIGYZI = 0.,0.!
EQ5B     !FMFAC = 1.! !END!
CW585T69 !SRCNAM  = CW585T69!
CW585T69 !X =   248.345,  -1333.008,  7.62195, 4.80,  0.91463,  0.00305,
299.66667,  0.0,  0.0019988519!
CW585T69 !SIGYZI = 0.,0.!
CW585T69 !FMFAC = 1.! !END!
VEQ11H32 !SRCNAM  = VEQ11H32!
VEQ11H32 !X =   252.690,  -1333.370,  25.91463, 9.89,  2.12195,  4.29573,
598.00000,  0.0,  0.0019857587!
VEQ11H32 !SIGYZI = 0.,0.!
VEQ11H32 !FMFAC = 1.! !END!
CE313    !SRCNAM  = CE313   !
CE313    !X =   255.385,  -1333.034,  35.06098, 8.00,  0.99085,  6.55488,
435.77778,  0.0,  0.0019567896!
CE313    !SIGYZI = 0.,0.!
CE313    !FMFAC = 1.! !END!
CE312    !SRCNAM  = CE312   !
CE312    !X =   255.385,  -1333.034,  35.06098, 8.00,  0.99085,  6.55488,
435.77778,  0.0,  0.0019520122!
CE312    !SIGYZI = 0.,0.!
CE312    !FMFAC = 1.! !END!
VW20F    !SRCNAM  = VW20F   !
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VW20F    !X =   249.802,  -1332.806,  0.91463, 6.93,  0.01000,  0.01000,
294.00000,  0.0,  0.0019074615!
VW20F    !SIGYZI = 0.,0.!
VW20F    !FMFAC = 1.! !END!
VWLPGSTG !SRCNAM  = VWLPGSTG!
VWLPGSTG !X =   249.658,  -1332.623,  4.57317, 5.47,  0.01000,  0.01000,
294.00000,  0.0,  0.0018594458!
VWLPGSTG !SIGYZI = 0.,0.!
VWLPGSTG !FMFAC = 1.! !END!
CW585T62 !SRCNAM  = CW585T62!
CW585T62 !X =   249.234,  -1333.229,  14.63415, 7.47,  0.91463,  0.00305,
417.44444,  0.0,  0.0018573353!
CW585T62 !SIGYZI = 0.,0.!
CW585T62 !FMFAC = 1.! !END!
VETK84   !SRCNAM  = VETK84  !
VETK84   !X =   253.985,  -1333.297,  14.63415, 11.54,  0.91463,  0.00305,
295.22222,  0.0,  0.0018502269!
VETK84   !SIGYZI = 0.,0.!
VETK84   !FMFAC = 1.! !END!
ELUTAIR  !SRCNAM  = ELUTAIR !
ELUTAIR  !X =   254.740,  -1332.711,  2.13415, 7.63,  0.15244,  21.34146,
533.00000,  0.0,  0.0018421210!
ELUTAIR  !SIGYZI = 0.,0.!
ELUTAIR  !FMFAC = 1.! !END!
VETK336  !SRCNAM  = VETK336 !
VETK336  !X =   252.435,  -1333.160,  14.63415, 7.57,  0.91463,  0.00305,
295.22222,  0.0,  0.0018253948!
VETK336  !SIGYZI = 0.,0.!
VETK336  !FMFAC = 1.! !END!
VETK206  !SRCNAM  = VETK206 !
VETK206  !X =   254.575,  -1332.748,  9.14634, 8.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0018232004!
VETK206  !SIGYZI = 0.,0.!
VETK206  !FMFAC = 1.! !END!
CE462    !SRCNAM  = CE462   !
CE462    !X =   255.991,  -1332.983,  1.82927, 7.16,  0.91463,  0.00305,
298.55556,  0.0,  0.0018226124!
CE462    !SIGYZI = 0.,0.!
CE462    !FMFAC = 1.! !END!
VW49H90  !SRCNAM  = VW49H90 !
VW49H90  !X =   249.748,  -1332.900,  30.48780, 7.90,  1.52439,  8.95122,
505.22222,  0.0,  0.0017743762!
VW49H90  !SIGYZI = 0.,0.!
VW49H90  !FMFAC = 1.! !END!
VL66     !SRCNAM  = VL66    !
VL66     !X =   248.865,  -1332.897,  14.63415, 4.57,  0.91463,  0.00305,
302.44444,  0.0,  0.0017536810!
VL66     !SIGYZI = 0.,0.!
VL66     !FMFAC = 1.! !END!
BD3      !SRCNAM  = BD3     !
BD3      !X =   267.888,  -1355.952,  9.75610, 4.00,  0.91463,  0.00305,
294.66667,  0.0,  0.0017446617!
BD3      !SIGYZI = 0.,0.!
BD3      !FMFAC = 1.! !END!
VW151    !SRCNAM  = VW151   !
VW151    !X =   249.807,  -1332.962,  24.39024, 8.00,  0.91463,  6.70732,
553.55556,  0.0,  0.0017297939!
VW151    !SIGYZI = 0.,0.!
VW151    !FMFAC = 1.! !END!
VW124    !SRCNAM  = VW124   !
VW124    !X =   249.735,  -1332.464,  0.30488, 4.25,  0.01000,  0.01000,
294.00000,  0.0,  0.0017258775!
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VW124    !SIGYZI = 0.,0.!
VW124    !FMFAC = 1.! !END!
VWENG727 !SRCNAM  = VWENG727!
VWENG727 !X =   249.487,  -1332.472,  9.14634, 4.12,  0.15244,  3.04878,
588.55556,  0.0,  0.0017029878!
VWENG727 !SIGYZI = 0.,0.!
VWENG727 !FMFAC = 1.! !END!
FE80     !SRCNAM  = FE80    !
FE80     !X =   255.717,  -1333.929,  28.96341, 9.00,  1.05488,  7.28659,
683.00000,  0.0,  0.0016905665!
FE80     !SIGYZI = 0.,0.!
FE80     !FMFAC = 1.! !END!
CW572T1B !SRCNAM  = CW572T1B!
CW572T1B !X =   248.345,  -1333.008,  4.57317, 4.80,  0.91463,  0.00305,
298.55556,  0.0,  0.0016804447!
CW572T1B !SIGYZI = 0.,0.!
CW572T1B !FMFAC = 1.! !END!
CW572T1A !SRCNAM  = CW572T1A!
CW572T1A !X =   248.346,  -1333.040,  4.57317, 4.96,  0.91463,  0.00305,
298.55556,  0.0,  0.0016804447!
CW572T1A !SIGYZI = 0.,0.!
CW572T1A !FMFAC = 1.! !END!
FW14FA11 !SRCNAM  = FW14FA11!
FW14FA11 !X =   245.610,  -1331.188,  7.22561, 15.00,  0.91463,  0.00305,
298.27778,  0.0,  0.0016742603!
FW14FA11 !SIGYZI = 0.,0.!
FW14FA11 !FMFAC = 1.! !END!
CD9899   !SRCNAM  = CD9899  !
CD9899   !X =   254.165,  -1333.728,  17.07317, 12.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0016450708!
CD9899   !SIGYZI = 0.,0.!
CD9899   !FMFAC = 1.! !END!
CE722    !SRCNAM  = CE722   !
CE722    !X =   255.735,  -1333.616,  12.80488, 8.77,  0.91463,  0.00305,
298.55556,  0.0,  0.0015902302!
CE722    !SIGYZI = 0.,0.!
CE722    !FMFAC = 1.! !END!
VEQL10   !SRCNAM  = VEQL10  !
VEQL10   !X =   252.635,  -1333.371,  32.31707, 9.88,  1.60061,  5.70732,
572.44444,  0.0,  0.0015871013!
VEQL10   !SIGYZI = 0.,0.!
VEQL10   !FMFAC = 1.! !END!
FWM4     !SRCNAM  = FWM4    !
FWM4     !X =   245.638,  -1331.187,  30.48780, 15.00,  1.21951,  15.24390,
602.44444,  0.0,  0.0031258508!
FWM4     !SIGYZI = 0.,0.!
FWM4     !FMFAC = 1.! !END!
CE465    !SRCNAM  = CE465   !
CE465    !X =   255.884,  -1333.082,  3.04878, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0015716770!
CE465    !SIGYZI = 0.,0.!
CE465    !FMFAC = 1.! !END!
FWFB153  !SRCNAM  = FWFB153 !
FWFB153  !X =   245.169,  -1330.329,  12.19512, 9.99,  0.91463,  0.00305,
296.36111,  0.0,  0.0015625527!
FWFB153  !SIGYZI = 0.,0.!
FWFB153  !FMFAC = 1.! !END!
FWO3     !SRCNAM  = FWO3    !
FWO3     !X =   245.526,  -1331.130,  9.14634, 15.00,  0.15244,  4.57317,
310.77778,  0.0,  0.0015559798!
FWO3     !SIGYZI = 0.,0.!
FWO3     !FMFAC = 1.! !END!
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VWENG723 !SRCNAM  = VWENG723!
VWENG723 !X =   249.357,  -1332.726,  3.04878, 4.00,  0.30488,  3.04878,
588.55556,  0.0,  0.0015460364!
VWENG723 !SIGYZI = 0.,0.!
VWENG723 !FMFAC = 1.! !END!
FEE10TK1 !SRCNAM  = FEE10TK1!
FEE10TK1 !X =   255.554,  -1333.996,  7.31707, 9.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0015422985!
FEE10TK1 !SIGYZI = 0.,0.!
FEE10TK1 !FMFAC = 1.! !END!
CE362    !SRCNAM  = CE362   !
CE362    !X =   255.276,  -1333.069,  33.53659, 8.00,  1.37195,  5.40854,
396.88889,  0.0,  0.0026345009!
CE362    !SIGYZI = 0.,0.!
CE362    !FMFAC = 1.! !END!
FWGG2    !SRCNAM  = FWGG2   !
FWGG2    !X =   245.833,  -1331.245,  28.96341, 13.41,  1.21951,  5.94512,
588.55556,  0.0,  0.0015298772!
FWGG2    !SIGYZI = 0.,0.!
FWGG2    !FMFAC = 1.! !END!
TPV2835  !SRCNAM  = TPV2835 !
TPV2835  !X =   217.355,  -1361.675,  6.70732, 16.06,  0.91463,  0.00305,
296.88889,  0.0,  0.0015257298!
TPV2835  !SIGYZI = 0.,0.!
TPV2835  !FMFAC = 1.! !END!
VW52F    !SRCNAM  = VW52F   !
VW52F    !X =   250.510,  -1334.282,  1.52439, 13.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0015240708!
VW52F    !SIGYZI = 0.,0.!
VW52F    !FMFAC = 1.! !END!
CW585T61 !SRCNAM  = CW585T61!
CW585T61 !X =   248.933,  -1333.270,  14.63415, 7.57,  0.91463,  0.00305,
414.11111,  0.0,  0.0015212463!
CW585T61 !SIGYZI = 0.,0.!
CW585T61 !FMFAC = 1.! !END!
VWENG738 !SRCNAM  = VWENG738!
VWENG738 !X =   249.003,  -1332.893,  12.19512, 4.58,  0.38110,  16.03659,
644.11111,  0.0,  0.0015096125!
VWENG738 !SIGYZI = 0.,0.!
VWENG738 !FMFAC = 1.! !END!
EQ6      !SRCNAM  = EQ6     !
EQ6      !X =   239.067,  -1333.886,  36.28049, 18.00,  1.82927,  1.74085,
560.77778,  0.0,  0.0014938418!
EQ6      !SIGYZI = 0.,0.!
EQ6      !FMFAC = 1.! !END!
CE723    !SRCNAM  = CE723   !
CE723    !X =   255.762,  -1333.615,  12.80488, 8.62,  0.91463,  0.00305,
298.55556,  0.0,  0.0014876364!
CE723    !SIGYZI = 0.,0.!
CE723    !FMFAC = 1.! !END!
DP231    !SRCNAM  = DP231   !
DP231    !X =   273.389,  -1325.101,  19.81707, 4.00,  0.76220,  3.35366,
559.66667,  0.0,  0.0014651983!
DP231    !SIGYZI = 0.,0.!
DP231    !FMFAC = 1.! !END!
VW187    !SRCNAM  = VW187   !
VW187    !X =   249.707,  -1332.465,  15.24390, 4.25,  0.91463,  0.00305,
296.33333,  0.0,  0.0014614708!
VW187    !SIGYZI = 0.,0.!
VW187    !FMFAC = 1.! !END!
FE9091   !SRCNAM  = FE9091  !
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FE9091   !X =   256.653,  -1332.962,  0.91463, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0014488395!
FE9091   !SIGYZI = 0.,0.!
FE9091   !FMFAC = 1.! !END!
CE765    !SRCNAM  = CE765   !
CE765    !X =   255.457,  -1333.594,  12.19512, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0014487240!
CE765    !SIGYZI = 0.,0.!
CE765    !FMFAC = 1.! !END!
VEQH125  !SRCNAM  = VEQH125 !
VEQH125  !X =   252.607,  -1333.372,  54.26829, 9.89,  2.89634,  3.08537,
546.33333,  0.0,  0.0035391135!
VEQH125  !SIGYZI = 0.,0.!
VEQH125  !FMFAC = 1.! !END!
CEF208   !SRCNAM  = CEF208  !
CEF208   !X =   255.347,  -1333.566,  11.89024, 9.00,  3.35366,  4.87805,
306.88889,  0.0,  0.0014107252!
CEF208   !SIGYZI = 0.,0.!
CEF208   !FMFAC = 1.! !END!
FEE18TK5 !SRCNAM  = FEE18TK5!
FEE18TK5 !X =   256.800,  -1333.238,  10.97561, 7.00,  0.91463,  0.00305,
298.22222,  0.0,  0.0014021993!
FEE18TK5 !SIGYZI = 0.,0.!
FEE18TK5 !FMFAC = 1.! !END!
VWENG722 !SRCNAM  = VWENG722!
VWENG722 !X =   249.309,  -1332.947,  9.14634, 5.30,  0.30488,  3.04878,
588.55556,  0.0,  0.0013938310!
VWENG722 !SIGYZI = 0.,0.!
VWENG722 !FMFAC = 1.! !END!
CW572BAA !SRCNAM  = CW572BAA!
CW572BAA !X =   248.345,  -1333.008,  2.74390, 4.80,  0.01000,  0.01000,
294.00000,  0.0,  0.0013907335!
CW572BAA !SIGYZI = 0.,0.!
CW572BAA !FMFAC = 1.! !END!
CW572BA  !SRCNAM  = CW572BA !
CW572BA  !X =   248.371,  -1332.976,  2.74390, 4.39,  0.01000,  0.01000,
294.00000,  0.0,  0.0013907335!
CW572BA  !SIGYZI = 0.,0.!
CW572BA  !FMFAC = 1.! !END!
VWENG739 !SRCNAM  = VWENG739!
VWENG739 !X =   249.003,  -1332.893,  12.19512, 4.58,  0.38110,  16.03659,
644.11111,  0.0,  0.0013700908!
VWENG739 !SIGYZI = 0.,0.!
VWENG739 !FMFAC = 1.! !END!
TRSTACK1 !SRCNAM  = TRSTACK1!
TRSTACK1 !X =   249.109,  -1332.734,  18.59756, 4.00,  0.91463,  7.98780,
533.00000,  0.0,  0.0013554331!
TRSTACK1 !SIGYZI = 0.,0.!
TRSTACK1 !FMFAC = 1.! !END!
CE663    !SRCNAM  = CE663   !
CE663    !X =   255.832,  -1333.208,  9.14634, 8.17,  0.91463,  0.00305,
298.55556,  0.0,  0.0013443558!
CE663    !SIGYZI = 0.,0.!
CE663    !FMFAC = 1.! !END!
CD9813   !SRCNAM  = CD9813  !
CD9813   !X =   254.413,  -1333.690,  14.32927, 12.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0013443558!
CD9813   !SIGYZI = 0.,0.!
CD9813   !FMFAC = 1.! !END!
VE8H5    !SRCNAM  = VE8H5   !
VE8H5    !X =   253.733,  -1333.180,  30.48780, 11.00,  1.52439,  6.34146,
598.00000,  0.0,  0.0013418778!
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VE8H5    !SIGYZI = 0.,0.!
VE8H5    !FMFAC = 1.! !END!
TP117T34 !SRCNAM  = TP117T34!
TP117T34 !X =   216.992,  -1361.561,  16.46341, 17.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0013135073!
TP117T34 !SIGYZI = 0.,0.!
TP117T34 !FMFAC = 1.! !END!
VETK201  !SRCNAM  = VETK201 !
VETK201  !X =   254.517,  -1332.657,  12.19512, 8.75,  0.91463,  0.00305,
295.22222,  0.0,  0.0013056219!
VETK201  !SIGYZI = 0.,0.!
VETK201  !FMFAC = 1.! !END!
VETK80   !SRCNAM  = VETK80  !
VETK80   !X =   254.119,  -1333.167,  12.19512, 11.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0013040259!
VETK80   !SIGYZI = 0.,0.!
VETK80   !FMFAC = 1.! !END!
FE67     !SRCNAM  = FE67    !
FE67     !X =   255.851,  -1333.799,  15.24390, 9.00,  1.04268,  4.77439,
477.44444,  0.0,  0.0012991120!
FE67     !SIGYZI = 0.,0.!
FE67     !FMFAC = 1.! !END!
FE68     !SRCNAM  = FE68    !
FE68     !X =   255.851,  -1333.799,  15.24390, 9.00,  1.04268,  4.77439,
477.44444,  0.0,  0.0012991120!
FE68     !SIGYZI = 0.,0.!
FE68     !FMFAC = 1.! !END!
CD9815   !SRCNAM  = CD9815  !
CD9815   !X =   254.429,  -1333.345,  14.63415, 11.35,  0.91463,  0.00305,
298.55556,  0.0,  0.0012735974!
CD9815   !SIGYZI = 0.,0.!
CD9815   !FMFAC = 1.! !END!
CE767    !SRCNAM  = CE767   !
CE767    !X =   255.382,  -1333.784,  6.09756, 9.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0012311466!
CE767    !SIGYZI = 0.,0.!
CE767    !FMFAC = 1.! !END!
VE12H1   !SRCNAM  = VE12H1  !
VE12H1   !X =   254.392,  -1333.035,  26.21951, 10.00,  2.28659,  3.91768,
591.33333,  0.0,  0.0012152604!
VE12H1   !SIGYZI = 0.,0.!
VE12H1   !FMFAC = 1.! !END!
TP117T31 !SRCNAM  = TP117T31!
TP117T31 !X =   217.612,  -1361.981,  16.46341, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0012151974!
TP117T31 !SIGYZI = 0.,0.!
TP117T31 !FMFAC = 1.! !END!
VWTK114  !SRCNAM  = VWTK114 !
VWTK114  !X =   249.730,  -1332.308,  19.81707, 4.00,  0.30488,  0.00305,
298.00000,  0.0,  0.0011851889!
VWTK114  !SIGYZI = 0.,0.!
VWTK114  !FMFAC = 1.! !END!
FWEE1    !SRCNAM  = FWEE1   !
FWEE1    !X =   245.849,  -1330.870,  30.48780, 14.86,  1.21951,  5.21341,
584.66667,  0.0,  0.0011682002!
FWEE1    !SIGYZI = 0.,0.!
FWEE1    !FMFAC = 1.! !END!
FE77     !SRCNAM  = FE77    !
FE77     !X =   255.796,  -1333.801,  36.89024, 9.00,  0.97561,  4.72561,
449.66667,  0.0,  0.0011576584!
FE77     !SIGYZI = 0.,0.!
FE77     !FMFAC = 1.! !END!
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VWENG721 !SRCNAM  = VWENG721!
VWENG721 !X =   249.541,  -1332.440,  9.14634, 4.00,  0.15244,  3.04878,
588.55556,  0.0,  0.0011498465!
VWENG721 !SIGYZI = 0.,0.!
VWENG721 !FMFAC = 1.! !END!
VETK360  !SRCNAM  = VETK360 !
VETK360  !X =   252.879,  -1333.239,  14.63415, 8.62,  0.91463,  0.00305,
295.22222,  0.0,  0.0011465600!
VETK360  !SIGYZI = 0.,0.!
VETK360  !FMFAC = 1.! !END!
FWFB15   !SRCNAM  = FWFB15  !
FWFB15   !X =   245.959,  -1330.866,  9.14634, 13.57,  0.91463,  0.00305,
299.52222,  0.0,  0.0011334563!
FWFB15   !SIGYZI = 0.,0.!
FWFB15   !FMFAC = 1.! !END!
VW72     !SRCNAM  = VW72    !
VW72     !X =   249.537,  -1332.314,  17.07317, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0011145776!
VW72     !SIGYZI = 0.,0.!
VW72     !FMFAC = 1.! !END!
VETK20   !SRCNAM  = VETK20  !
VETK20   !X =   254.184,  -1333.447,  9.75610, 12.00,  0.30488,  0.03049,
296.88889,  0.0,  0.0010917194!
VETK20   !SIGYZI = 0.,0.!
VETK20   !FMFAC = 1.! !END!
VE44H3   !SRCNAM  = VE44H3  !
VE44H3   !X =   253.709,  -1333.306,  23.17073, 11.55,  1.06707,  5.03049,
544.11111,  0.0,  0.0010809046!
VE44H3   !SIGYZI = 0.,0.!
VE44H3   !FMFAC = 1.! !END!
TRSTACK3 !SRCNAM  = TRSTACK3!
TRSTACK3 !X =   249.109,  -1332.734,  30.48780, 4.00,  2.16463,  5.30488,
555.22222,  0.0,  0.0010786157!
TRSTACK3 !SIGYZI = 0.,0.!
TRSTACK3 !FMFAC = 1.! !END!
TP324COO !SRCNAM  = TP324COO!
TP324COO !X =   216.139,  -1361.771,  3.96341, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0010598840!
TP324COO !SIGYZI = 0.,0.!
TP324COO !FMFAC = 1.! !END!
TP99COOL !SRCNAM  = TP99COOL!
TP99COOL !X =   216.236,  -1362.300,  12.19512, 16.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0010598840!
TP99COOL !SIGYZI = 0.,0.!
TP99COOL !FMFAC = 1.! !END!
FWII7    !SRCNAM  = FWII7   !
FWII7    !X =   245.646,  -1331.438,  30.48780, 15.00,  2.43902,  9.20732,
421.88889,  0.0,  0.0015556018!
FWII7    !SIGYZI = 0.,0.!
FWII7    !FMFAC = 1.! !END!
COAB1    !SRCNAM  = COAB1   !
COAB1    !X =   255.350,  -1332.786,  54.87805, 7.00,  1.82927,  17.66463,
444.11111,  0.0,  0.0010499826!
COAB1    !SIGYZI = 0.,0.!
COAB1    !FMFAC = 1.! !END!
EQAC123  !SRCNAM  = EQAC123 !
EQAC123  !X =   238.921,  -1333.546,  1.52439, 18.00,  0.07622,  30.48780,
644.11111,  0.0,  0.0010321329!
EQAC123  !SIGYZI = 0.,0.!
EQAC123  !FMFAC = 1.! !END!
TRTK316  !SRCNAM  = TRTK316 !
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TRTK316  !X =   249.056,  -1332.798,  14.63415, 4.00,  0.91463,  0.00305,
449.66667,  0.0,  0.0010132332!
TRTK316  !SIGYZI = 0.,0.!
TRTK316  !FMFAC = 1.! !END!
FWO1     !SRCNAM  = FWO1    !
FWO1     !X =   245.499,  -1331.131,  28.65854, 15.00,  1.82927,  1.06707,
605.22222,  0.0,  0.0010132332!
FWO1     !SIGYZI = 0.,0.!
FWO1     !FMFAC = 1.! !END!
FWFB26   !SRCNAM  = FWFB26  !
FWFB26   !X =   245.982,  -1330.709,  4.57317, 14.19,  0.91463,  0.00305,
298.61111,  0.0,  0.0010006335!
FWFB26   !SIGYZI = 0.,0.!
FWFB26   !FMFAC = 1.! !END!
VETK21   !SRCNAM  = VETK21  !
VETK21   !X =   254.183,  -1333.417,  14.63415, 11.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0009964335!
VETK21   !SIGYZI = 0.,0.!
VETK21   !FMFAC = 1.! !END!
VESRU1IN !SRCNAM  = VESRU1IN!
VESRU1IN !X =   253.593,  -1333.123,  77.74390, 11.00,  1.21951,  10.08232,
634.11111,  0.0,  0.0009964335!
VESRU1IN !SIGYZI = 0.,0.!
VESRU1IN !FMFAC = 1.! !END!
VEQ3H3   !SRCNAM  = VEQ3H3  !
VEQ3H3   !X =   252.552,  -1333.374,  24.39024, 9.89,  1.77744,  2.77439,
598.00000,  0.0,  0.0026176067!
VEQ3H3   !SIGYZI = 0.,0.!
VEQ3H3   !FMFAC = 1.! !END!
VWENG724 !SRCNAM  = VWENG724!
VWENG724 !X =   249.513,  -1332.441,  9.14634, 4.00,  0.15244,  3.04878,
588.55556,  0.0,  0.0009838337!
VWENG724 !SIGYZI = 0.,0.!
VWENG724 !FMFAC = 1.! !END!
TPTF1    !SRCNAM  = TPTF1   !
TPTF1    !X =   216.702,  -1362.069,  12.80488, 16.23,  0.91463,  0.00305,
296.88889,  0.0,  0.0014941253!
TPTF1    !SIGYZI = 0.,0.!
TPTF1    !FMFAC = 1.! !END!
TP130T52 !SRCNAM  = TP130T52!
TP130T52 !X =   216.587,  -1361.946,  14.02439, 17.00,  0.30488,  0.00305,
306.33333,  0.0,  0.0009439344!
TP130T52 !SIGYZI = 0.,0.!
TP130T52 !FMFAC = 1.! !END!
FWFB402  !SRCNAM  = FWFB402 !
FWFB402  !X =   254.053,  -1333.701,  12.19512, 12.00,  0.91463,  0.00305,
296.49444,  0.0,  0.0009355345!
FWFB402  !SIGYZI = 0.,0.!
FWFB402  !FMFAC = 1.! !END!
CE085    !SRCNAM  = CE085   !
CE085    !X =   256.121,  -1333.604,  25.91463, 8.00,  0.99085,  5.18293,
580.77778,  0.0,  0.0009166348!
CE085    !SIGYZI = 0.,0.!
CE085    !FMFAC = 1.! !END!
VW126    !SRCNAM  = VW126   !
VW126    !X =   249.584,  -1332.906,  83.84146, 7.44,  0.10000,  0.01000,
810.77778,  0.0,  0.0023509111!
VW126    !SIGYZI = 0.,0.!
VW126    !FMFAC = 1.! !END!
CE665A   !SRCNAM  = CE665A  !
CE665A   !X =   255.972,  -1333.265,  14.32927, 8.45,  0.91463,  0.00305,
298.55556,  0.0,  0.0009092850!
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CE665A   !SIGYZI = 0.,0.!
CE665A   !FMFAC = 1.! !END!
FWFB405  !SRCNAM  = FWFB405 !
FWFB405  !X =   254.055,  -1333.763,  12.19512, 12.00,  0.91463,  0.00305,
298.03333,  0.0,  0.0009092850!
FWFB405  !SIGYZI = 0.,0.!
FWFB405  !FMFAC = 1.! !END!
TRTK313  !SRCNAM  = TRTK313 !
TRTK313  !X =   249.111,  -1332.796,  12.19512, 4.00,  0.91463,  0.00305,
449.66667,  0.0,  0.0009008851!
TRTK313  !SIGYZI = 0.,0.!
TRTK313  !FMFAC = 1.! !END!
VEEPFLAR !SRCNAM  = VEEPFLAR!
VEEPFLAR !X =   254.514,  -1332.563,  30.48780, 7.76,  0.10000,  0.01000,
810.77778,  0.0,  0.0011602308!
VEEPFLAR !SIGYZI = 0.,0.!
VEEPFLAR !FMFAC = 1.! !END!
FWFB124  !SRCNAM  = FWFB124 !
FWFB124  !X =   245.728,  -1330.530,  12.19512, 11.71,  0.91463,  0.00305,
298.62222,  0.0,  0.0008966852!
FWFB124  !SIGYZI = 0.,0.!
FWFB124  !FMFAC = 1.! !END!
FWFB403  !SRCNAM  = FWFB403 !
FWFB403  !X =   254.082,  -1333.730,  12.19512, 12.00,  0.91463,  0.00305,
296.83889,  0.0,  0.0008735856!
FWFB403  !SIGYZI = 0.,0.!
FWFB403  !FMFAC = 1.! !END!
VWENG5O1 !SRCNAM  = VWENG5O1!
VWENG5O1 !X =   249.356,  -1332.695,  12.19512, 4.00,  0.30488,  8.35366,
588.55556,  0.0,  0.0008641357!
VWENG5O1 !SIGYZI = 0.,0.!
VWENG5O1 !FMFAC = 1.! !END!
FES84    !SRCNAM  = FES84   !
FES84    !X =   255.748,  -1334.021,  76.21951, 9.00,  1.67683,  9.66463,
807.44444,  0.0,  0.0008557359!
FES84    !SIGYZI = 0.,0.!
FES84    !FMFAC = 1.! !END!
FWGG1    !SRCNAM  = FWGG1   !
FWGG1    !X =   245.833,  -1331.245,  23.17073, 13.41,  1.21951,  4.60366,
588.55556,  0.0,  0.0008457610!
FWGG1    !SIGYZI = 0.,0.!
FWGG1    !FMFAC = 1.! !END!
TRTK312  !SRCNAM  = TRTK312 !
TRTK312  !X =   249.084,  -1332.829,  12.19512, 4.00,  0.91463,  0.00305,
449.66667,  0.0,  0.0008452360!
TRTK312  !SIGYZI = 0.,0.!
TRTK312  !FMFAC = 1.! !END!
NAFWFSU4 !SRCNAM  = NAFWFSU4!
NAFWFSU4 !X =   271.096,  -1345.223,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0008420861!
NAFWFSU4 !SIGYZI = 0.,0.!
NAFWFSU4 !FMFAC = 1.! !END!
VEBLRHSE !SRCNAM  = VEBLRHSE!
VEBLRHSE !X =   254.308,  -1333.005,  0.91463, 10.28,  0.01000,  0.01000,
294.00000,  0.0,  0.0008242364!
VEBLRHSE !SIGYZI = 0.,0.!
VEBLRHSE !FMFAC = 1.! !END!
FWSURFCL !SRCNAM  = FWSURFCL!
FWSURFCL !X =   245.704,  -1330.655,  1.00030, 13.62,  0.01000,  0.01000,
294.00000,  0.0,  0.0008231864!
FWSURFCL !SIGYZI = 0.,0.!
FWSURFCL !FMFAC = 1.! !END!
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COAB2    !SRCNAM  = COAB2   !
COAB2    !X =   255.350,  -1332.786,  54.87805, 7.00,  1.82927,  17.66463,
444.11111,  0.0,  0.0008210864!
COAB2    !SIGYZI = 0.,0.!
COAB2    !FMFAC = 1.! !END!
TP117T35 !SRCNAM  = TP117T35!
TP117T35 !X =   217.612,  -1361.981,  16.46341, 16.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0008032367!
TP117T35 !SIGYZI = 0.,0.!
TP117T35 !FMFAC = 1.! !END!
VW38F    !SRCNAM  = VW38F   !
VW38F    !X =   250.301,  -1332.883,  6.09756, 7.90,  0.01000,  0.01000,
294.00000,  0.0,  0.0008032367!
VW38F    !SIGYZI = 0.,0.!
VW38F    !FMFAC = 1.! !END!
CE734    !SRCNAM  = CE734   !
CE734    !X =   255.368,  -1333.347,  6.09756, 8.93,  0.91463,  0.00305,
298.55556,  0.0,  0.0007958868!
CE734    !SIGYZI = 0.,0.!
CE734    !FMFAC = 1.! !END!
FWWTAB   !SRCNAM  = FWWTAB  !
FWWTAB   !X =   246.336,  -1330.573,  0.91463, 5.68,  0.01000,  0.01000,
294.00000,  0.0,  0.0007874870!
FWWTAB   !SIGYZI = 0.,0.!
FWWTAB   !FMFAC = 1.! !END!
FWWT3    !SRCNAM  = FWWT3   !
FWWT3    !X =   246.371,  -1330.791,  0.91463, 5.03,  0.01000,  0.01000,
294.00000,  0.0,  0.0007874870!
FWWT3    !SIGYZI = 0.,0.!
FWWT3    !FMFAC = 1.! !END!
FE81     !SRCNAM  = FE81    !
FE81     !X =   255.717,  -1333.929,  27.43902, 9.00,  1.12805,  3.62805,
583.00000,  0.0,  0.0007864370!
FE81     !SIGYZI = 0.,0.!
FE81     !FMFAC = 1.! !END!
VE37H1   !SRCNAM  = VE37H1  !
VE37H1   !X =   253.704,  -1333.119,  30.48780, 11.45,  1.06707,  4.72866,
598.00000,  0.0,  0.0007780371!
VE37H1   !SIGYZI = 0.,0.!
VE37H1   !FMFAC = 1.! !END!
VEPMAFE  !SRCNAM  = VEPMAFE !
VEPMAFE  !X =   253.977,  -1333.048,  6.09756, 10.46,  0.01000,  0.01000,
294.00000,  0.0,  0.0007717372!
VEPMAFE  !SIGYZI = 0.,0.!
VEPMAFE  !FMFAC = 1.! !END!
CE103    !SRCNAM  = CE103   !
CE103    !X =   256.093,  -1333.604,  20.12195, 8.00,  0.76220,  7.28659,
580.77778,  0.0,  0.0007633374!
CE103    !SIGYZI = 0.,0.!
CE103    !FMFAC = 1.! !END!
TRTK314  !SRCNAM  = TRTK314 !
TRTK314  !X =   249.057,  -1332.830,  14.63415, 4.00,  0.91463,  0.00305,
449.66667,  0.0,  0.0007601874!
TRTK314  !SIGYZI = 0.,0.!
TRTK314  !FMFAC = 1.! !END!
TP117T53 !SRCNAM  = TP117T53!
TP117T53 !X =   217.211,  -1361.461,  42.68293, 17.00,  0.10000,  0.01000,
1255.22222,  0.0,  0.0007559875!
TP117T53 !SIGYZI = 0.,0.!
TP117T53 !FMFAC = 1.! !END!
TPS15    !SRCNAM  = TPS15   !
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TPS15    !X =   216.346,  -1362.234,  25.91463, 16.00,  0.91463,  0.00305,
316.33333,  0.0,  0.0007559875!
TPS15    !SIGYZI = 0.,0.!
TPS15    !FMFAC = 1.! !END!
VETK356  !SRCNAM  = VETK356 !
VETK356  !X =   252.491,  -1333.190,  14.63415, 7.91,  0.91463,  0.00305,
295.22222,  0.0,  0.0007528376!
VETK356  !SIGYZI = 0.,0.!
VETK356  !FMFAC = 1.! !END!
FEF79    !SRCNAM  = FEF79   !
FEF79    !X =   255.744,  -1333.897,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0007517876!
FEF79    !SIGYZI = 0.,0.!
FEF79    !FMFAC = 1.! !END!
VEQCT4   !SRCNAM  = VEQCT4  !
VEQCT4   !X =   253.828,  -1333.553,  12.19512, 12.00,  6.09756,  9.14634,
294.11111,  0.0,  0.0007486376!
VEQCT4   !SIGYZI = 0.,0.!
VEQCT4   !FMFAC = 1.! !END!
CE292    !SRCNAM  = CE292   !
CE292    !X =   255.494,  -1333.000,  34.45122, 7.88,  2.59146,  17.07317,
460.77778,  0.0,  0.0010216331!
CE292    !SIGYZI = 0.,0.!
CE292    !FMFAC = 1.! !END!
CE412    !SRCNAM  = CE412   !
CE412    !X =   255.249,  -1333.102,  76.21951, 8.00,  1.21951,  13.90244,
634.11111,  0.0,  0.0007444377!
CE412    !SIGYZI = 0.,0.!
CE412    !FMFAC = 1.! !END!
VEQCT5   !SRCNAM  = VEQCT5  !
VEQCT5   !X =   252.661,  -1333.309,  12.19512, 9.23,  6.09756,  9.14634,
294.11111,  0.0,  0.0007423377!
VEQCT5   !SIGYZI = 0.,0.!
VEQCT5   !FMFAC = 1.! !END!
VW123    !SRCNAM  = VW123   !
VW123    !X =   250.264,  -1332.604,  45.73171, 5.10,  1.29573,  9.14634,
310.77778,  0.0,  0.0007307879!
VW123    !SIGYZI = 0.,0.!
VW123    !FMFAC = 1.! !END!
CW572T7  !SRCNAM  = CW572T7 !
CW572T7  !X =   248.372,  -1333.007,  2.98780, 4.66,  0.91463,  0.00305,
305.22222,  0.0,  0.0007265880!
CW572T7  !SIGYZI = 0.,0.!
CW572T7  !FMFAC = 1.! !END!
VE17H1   !SRCNAM  = VE17H1  !
VE17H1   !X =   254.528,  -1332.998,  18.90244, 9.46,  1.21951,  3.70732,
588.55556,  0.0,  0.0011129816!
VE17H1   !SIGYZI = 0.,0.!
VE17H1   !FMFAC = 1.! !END!
VE84CT2  !SRCNAM  = VE84CT2 !
VE84CT2  !X =   254.497,  -1332.906,  12.19512, 9.10,  6.09756,  9.14634,
294.11111,  0.0,  0.0007244880!
VE84CT2  !SIGYZI = 0.,0.!
VE84CT2  !FMFAC = 1.! !END!
VEQ11H31 !SRCNAM  = VEQ11H31!
VEQ11H31 !X =   252.773,  -1333.367,  25.60976, 9.89,  1.21951,  4.43598,
563.00000,  0.0,  0.0007139882!
VEQ11H31 !SIGYZI = 0.,0.!
VEQ11H31 !FMFAC = 1.! !END!
VE38H1   !SRCNAM  = VE38H1  !
VE38H1   !X =   253.731,  -1333.119,  30.48780, 11.44,  1.06707,  4.60366,
598.00000,  0.0,  0.0007139882!
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VE38H1   !SIGYZI = 0.,0.!
VE38H1   !FMFAC = 1.! !END!
FWEE5    !SRCNAM  = FWEE5   !
FWEE5    !X =   245.796,  -1330.902,  18.29268, 14.50,  0.60976,  4.51220,
580.77778,  0.0,  0.0007124132!
FWEE5    !SIGYZI = 0.,0.!
FWEE5    !FMFAC = 1.! !END!
GRHTR1A  !SRCNAM  = GRHTR1A !
GRHTR1A  !X =   271.368,  -1318.431,  11.58537, 7.00,  0.91463,  4.26829,
559.66667,  0.0,  0.0006877386!
GRHTR1A  !SIGYZI = 0.,0.!
GRHTR1A  !FMFAC = 1.! !END!
GRHTR1B  !SRCNAM  = GRHTR1B !
GRHTR1B  !X =   271.368,  -1318.431,  11.58537, 7.00,  0.91463,  4.26829,
559.66667,  0.0,  0.0006877386!
GRHTR1B  !SIGYZI = 0.,0.!
GRHTR1B  !FMFAC = 1.! !END!
VW7      !SRCNAM  = VW7     !
VW7      !X =   249.492,  -1332.628,  17.07317, 4.96,  0.91463,  0.00305,
298.55556,  0.0,  0.0006782888!
VW7      !SIGYZI = 0.,0.!
VW7      !FMFAC = 1.! !END!
FE33     !SRCNAM  = FE33    !
FE33     !X =   255.823,  -1333.770,  22.86585, 9.00,  0.90244,  13.59756,
505.22222,  0.0,  0.0006698889!
FE33     !SIGYZI = 0.,0.!
FE33     !FMFAC = 1.! !END!
FE34     !SRCNAM  = FE34    !
FE34     !X =   255.823,  -1333.770,  22.86585, 9.00,  0.90244,  13.59756,
505.22222,  0.0,  0.0006698889!
FE34     !SIGYZI = 0.,0.!
FE34     !FMFAC = 1.! !END!
VW37F    !SRCNAM  = VW37F   !
VW37F    !X =   250.244,  -1332.854,  6.09756, 7.57,  0.01000,  0.01000,
294.00000,  0.0,  0.0006614891!
VW37F    !SIGYZI = 0.,0.!
VW37F    !FMFAC = 1.! !END!
FWF37    !SRCNAM  = FWF37   !
FWF37    !X =   244.693,  -1330.998,  0.91463, 14.81,  0.01000,  0.01000,
294.00000,  0.0,  0.0006520392!
FWF37    !SIGYZI = 0.,0.!
FWF37    !FMFAC = 1.! !END!
CEF371   !SRCNAM  = CEF371  !
CEF371   !X =   255.279,  -1333.163,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0006488893!
CEF371   !SIGYZI = 0.,0.!
CEF371   !FMFAC = 1.! !END!
VW94     !SRCNAM  = VW94    !
VW94     !X =   249.565,  -1332.283,  17.07317, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0006488893!
VW94     !SIGYZI = 0.,0.!
VW94     !FMFAC = 1.! !END!
EQ8      !SRCNAM  = EQ8     !
EQ8      !X =   239.125,  -1333.945,  18.90244, 18.00,  1.06707,  1.58537,
699.66667,  0.0,  0.0006488893!
EQ8      !SIGYZI = 0.,0.!
EQ8      !FMFAC = 1.! !END!
VL68     !SRCNAM  = VL68    !
VL68     !X =   248.978,  -1332.957,  14.63415, 5.25,  0.91463,  0.00305,
298.00000,  0.0,  0.0006425894!
VL68     !SIGYZI = 0.,0.!
VL68     !FMFAC = 1.! !END!
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TPS14    !SRCNAM  = TPS14   !
TPS14    !X =   216.372,  -1362.203,  57.92683, 16.00,  0.10000,  0.01000,
977.44444,  0.0,  0.0006415394!
TPS14    !SIGYZI = 0.,0.!
TPS14    !FMFAC = 1.! !END!
FWEE2    !SRCNAM  = FWEE2   !
FWEE2    !X =   245.822,  -1330.901,  30.48780, 14.64,  1.21951,  2.46951,
555.22222,  0.0,  0.0006383894!
FWEE2    !SIGYZI = 0.,0.!
FWEE2    !FMFAC = 1.! !END!
FEF97    !SRCNAM  = FEF97   !
FEF97    !X =   256.158,  -1333.041,  1.82927, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0006354495!
FEF97    !SIGYZI = 0.,0.!
FEF97    !FMFAC = 1.! !END!
FELOADFU !SRCNAM  = FELOADFU!
FELOADFU !X =   256.653,  -1332.962,  3.04878, 1.50,  0.01000,  0.01000,
294.00000,  0.0,  0.0006331395!
FELOADFU !SIGYZI = 0.,0.!
FELOADFU !FMFAC = 1.! !END!
FEE20V22 !SRCNAM  = FEE20V22!
FEE20V22 !X =   255.875,  -1333.673,  4.87805, 9.00,  0.91463,  0.00305,
299.24444,  0.0,  0.0005963901!
FEE20V22 !SIGYZI = 0.,0.!
FEE20V22 !FMFAC = 1.! !END!
CW572LS1 !SRCNAM  = CW572LS1!
CW572LS1 !X =   248.290,  -1333.041,  1.00000, 5.17,  0.01000,  0.01000,
294.00000,  0.0,  0.0005879903!
CW572LS1 !SIGYZI = 0.,0.!
CW572LS1 !FMFAC = 1.! !END!
FWFB14   !SRCNAM  = FWFB14  !
FWFB14   !X =   245.929,  -1330.805,  14.17683, 14.57,  0.91463,  0.00305,
296.61667,  0.0,  0.0005522909!
FWFB14   !SIGYZI = 0.,0.!
FWFB14   !FMFAC = 1.! !END!
VW93     !SRCNAM  = VW93    !
VW93     !X =   249.536,  -1332.284,  17.07317, 4.00,  0.91463,  0.00305,
298.55556,  0.0,  0.0005428410!
VW93     !SIGYZI = 0.,0.!
VW93     !FMFAC = 1.! !END!
TP117T36 !SRCNAM  = TP117T36!
TP117T36 !X =   217.612,  -1361.981,  16.46341, 16.00,  0.91463,  0.00305,
302.44444,  0.0,  0.0005365411!
TP117T36 !SIGYZI = 0.,0.!
TP117T36 !FMFAC = 1.! !END!
FW14FA12 !SRCNAM  = FW14FA12!
FW14FA12 !X =   245.610,  -1331.188,  7.31707, 15.00,  0.91463,  0.00305,
298.27778,  0.0,  0.0005354911!
FW14FA12 !SIGYZI = 0.,0.!
FW14FA12 !FMFAC = 1.! !END!
VE8H3    !SRCNAM  = VE8H3   !
VE8H3    !X =   253.733,  -1333.180,  30.48780, 11.00,  1.82927,  3.35976,
598.00000,  0.0,  0.0005323412!
VE8H3    !SIGYZI = 0.,0.!
VE8H3    !FMFAC = 1.! !END!
TRTK315  !SRCNAM  = TRTK315 !
TRTK315  !X =   249.029,  -1332.831,  14.63415, 4.00,  0.91463,  0.00305,
449.66667,  0.0,  0.0005312912!
TRTK315  !SIGYZI = 0.,0.!
TRTK315  !FMFAC = 1.! !END!
CW572DAF !SRCNAM  = CW572DAF!
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CW572DAF !X =   248.316,  -1332.978,  3.96341, 4.89,  0.01000,  0.01000,
294.00000,  0.0,  0.0005176414!
CW572DAF !SIGYZI = 0.,0.!
CW572DAF !FMFAC = 1.! !END!
FW28FB22 !SRCNAM  = FW28FB22!
FW28FB22 !X =   245.549,  -1330.972,  4.87805, 14.97,  0.91463,  0.00305,
324.21667,  0.0,  0.0005144915!
FW28FB22 !SIGYZI = 0.,0.!
FW28FB22 !FMFAC = 1.! !END!
DPGRPRD  !SRCNAM  = DPGRPRD !
DPGRPRD  !X =   273.466,  -1324.942,  3.04878, 4.06,  0.91463,  0.00305,
299.66667,  0.0,  0.0005071416!
DPGRPRD  !SIGYZI = 0.,0.!
DPGRPRD  !FMFAC = 1.! !END!
VE37H2   !SRCNAM  = VE37H2  !
VE37H2   !X =   253.731,  -1333.119,  30.48780, 11.44,  1.06707,  2.93902,
593.55556,  0.0,  0.0005029417!
VE37H2   !SIGYZI = 0.,0.!
VE37H2   !FMFAC = 1.! !END!
TP310B11 !SRCNAM  = TP310B11!
TP310B11 !X =   217.080,  -1361.715,  21.34146, 16.86,  0.91463,  15.54878,
394.11111,  0.0,  0.0014626258!
TP310B11 !SIGYZI = 0.,0.!
TP310B11 !FMFAC = 1.! !END!
CEF069   !SRCNAM  = CEF069  !
CEF069   !X =   255.674,  -1333.430,  14.02439, 8.47,  4.87805,  6.40244,
310.77778,  0.0,  0.0004819420!
CEF069   !SIGYZI = 0.,0.!
CEF069   !FMFAC = 1.! !END!
VETK87   !SRCNAM  = VETK87  !
VETK87   !X =   253.819,  -1333.272,  9.14634, 11.60,  0.91463,  0.00305,
295.22222,  0.0,  0.0004798421!
VETK87   !SIGYZI = 0.,0.!
VETK87   !FMFAC = 1.! !END!
GRPLTFU2 !SRCNAM  = GRPLTFU2!
GRPLTFU2 !X =   271.341,  -1318.463,  7.62195, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004787921!
GRPLTFU2 !SIGYZI = 0.,0.!
GRPLTFU2 !FMFAC = 1.! !END!
FWTMPENG !SRCNAM  = FWTMPENG!
FWTMPENG !X =   245.639,  -1330.314,  1.82927, 10.27,  0.04878,  2.92683,
644.11111,  0.0,  0.0004724922!
FWTMPENG !SIGYZI = 0.,0.!
FWTMPENG !FMFAC = 1.! !END!
TPFTF26  !SRCNAM  = TPFTF26 !
TPFTF26  !X =   216.561,  -1362.010,  1.52439, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004661923!
TPFTF26  !SIGYZI = 0.,0.!
TPFTF26  !FMFAC = 1.! !END!
CE1710   !SRCNAM  = CE1710  !
CE1710   !X =   255.430,  -1333.563,  12.19512, 9.00,  0.70122,  13.71951,
671.88889,  0.0,  0.0004556925!
CE1710   !SIGYZI = 0.,0.!
CE1710   !FMFAC = 1.! !END!
FW31FB2  !SRCNAM  = FW31FB2 !
FW31FB2  !X =   245.890,  -1331.304,  11.43293, 12.52,  0.91463,  0.00305,
297.63333,  0.0,  0.0004546425!
FW31FB2  !SIGYZI = 0.,0.!
FW31FB2  !FMFAC = 1.! !END!
TPFT27   !SRCNAM  = TPFT27  !
TPFT27   !X =   216.512,  -1362.261,  1.00610, 16.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004525425!
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TPFT27   !SIGYZI = 0.,0.!
TPFT27   !FMFAC = 1.! !END!
NAFUGGR4 !SRCNAM  = NAFUGGR4!
NAFUGGR4 !X =   271.159,  -1345.470,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004504426!
NAFUGGR4 !SIGYZI = 0.,0.!
NAFUGGR4 !FMFAC = 1.! !END!
FEFFGS   !SRCNAM  = FEFFGS  !
FEFFGS   !X =   255.930,  -1333.671,  1.82927, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0004472926!
FEFFGS   !SIGYZI = 0.,0.!
FEFFGS   !FMFAC = 1.! !END!
TPFRACTK !SRCNAM  = TPFRACTK!
TPFRACTK !X =   217.355,  -1361.675,  3.04878, 16.06,  0.91463,  0.00305,
296.88889,  0.0,  0.0004462426!
TPFRACTK !SIGYZI = 0.,0.!
TPFRACTK !FMFAC = 1.! !END!
VL67     !SRCNAM  = VL67    !
VL67     !X =   248.949,  -1332.926,  14.63415, 4.91,  0.91463,  0.00305,
298.00000,  0.0,  0.0004420427!
VL67     !SIGYZI = 0.,0.!
VL67     !FMFAC = 1.! !END!
CEF110   !SRCNAM  = CEF110  !
CEF110   !X =   256.092,  -1333.573,  6.09756, 8.00,  4.26829,  7.01220,
300.22222,  0.0,  0.0004420427!
CEF110   !SIGYZI = 0.,0.!
CEF110   !FMFAC = 1.! !END!
VW195    !SRCNAM  = VW195   !
VW195    !X =   249.673,  -1333.090,  1.00000, 8.90,  0.10000,  0.01000,
294.00000,  0.0,  0.0004315429!
VW195    !SIGYZI = 0.,0.!
VW195    !FMFAC = 1.! !END!
VEQTBABT !SRCNAM  = VEQTBABT!
VEQTBABT !X =   254.610,  -1332.996,  12.19512, 9.00,  6.09756,  9.14634,
294.11111,  0.0,  0.0004304929!
VEQTBABT !SIGYZI = 0.,0.!
VEQTBABT !FMFAC = 1.! !END!
TP126V89 !SRCNAM  = TP126V89!
TP126V89 !X =   216.643,  -1361.977,  3.65854, 17.00,  0.91463,  0.00305,
416.33333,  0.0,  0.0004262930!
TP126V89 !SIGYZI = 0.,0.!
TP126V89 !FMFAC = 1.! !END!
VEALKY1F !SRCNAM  = VEALKY1F!
VEALKY1F !X =   254.555,  -1332.968,  0.91463, 9.12,  0.01000,  0.01000,
294.00000,  0.0,  0.0004241930!
VEALKY1F !SIGYZI = 0.,0.!
VEALKY1F !FMFAC = 1.! !END!
TP99V830 !SRCNAM  = TP99V830!
TP99V830 !X =   216.892,  -1361.970,  6.40244, 16.06,  0.91463,  0.00305,
299.66667,  0.0,  0.0004178931!
TP99V830 !SIGYZI = 0.,0.!
TP99V830 !FMFAC = 1.! !END!
CE766A   !SRCNAM  = CE766A  !
CE766A   !X =   255.989,  -1332.922,  3.65854, 7.04,  0.91463,  0.00305,
298.55556,  0.0,  0.0004084432!
CE766A   !SIGYZI = 0.,0.!
CE766A   !FMFAC = 1.! !END!
VL65     !SRCNAM  = VL65    !
VL65     !X =   248.921,  -1332.896,  14.63415, 4.58,  0.91463,  0.00305,
302.44444,  0.0,  0.0003905935!
VL65     !SIGYZI = 0.,0.!
VL65     !FMFAC = 1.! !END!
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EQJ2019A !SRCNAM  = EQJ2019A!
EQJ2019A !X =   239.418,  -1333.563,  1.52439, 18.00,  0.07622,  30.48780,
644.11111,  0.0,  0.0003874436!
EQJ2019A !SIGYZI = 0.,0.!
EQJ2019A !FMFAC = 1.! !END!
VW133F   !SRCNAM  = VW133F  !
VW133F   !X =   250.156,  -1332.670,  1.82927, 6.58,  0.01000,  0.01000,
294.00000,  0.0,  0.0003706439!
VW133F   !SIGYZI = 0.,0.!
VW133F   !FMFAC = 1.! !END!
TPF112MR !SRCNAM  = TPF112MR!
TPF112MR !X =   217.159,  -1361.619,  1.52439, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003632940!
TPF112MR !SIGYZI = 0.,0.!
TPF112MR !FMFAC = 1.! !END!
A2TKVNT  !SRCNAM  = A2TKVNT !
A2TKVNT  !X =   252.741,  -1302.956,  4.57317, 13.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0003590941!
A2TKVNT  !SIGYZI = 0.,0.!
A2TKVNT  !FMFAC = 1.! !END!
TPV8507  !SRCNAM  = TPV8507 !
TPV8507  !X =   216.892,  -1361.970,  12.19512, 16.06,  0.91463,  0.00305,
343.00000,  0.0,  0.0007171381!
TPV8507  !SIGYZI = 0.,0.!
TPV8507  !FMFAC = 1.! !END!
TP324WWT !SRCNAM  = TP324WWT!
TP324WWT !X =   216.029,  -1361.807,  0.91463, -999.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003569941!
TP324WWT !SIGYZI = 0.,0.!
TP324WWT !FMFAC = 1.! !END!
CW572T2  !SRCNAM  = CW572T2 !
CW572T2  !X =   248.372,  -1333.007,  1.28049, 4.66,  1.52439,  0.00305,
305.22222,  0.0,  0.0003538441!
CW572T2  !SIGYZI = 0.,0.!
CW572T2  !FMFAC = 1.! !END!
TP130V16 !SRCNAM  = TP130V16!
TP130V16 !X =   216.587,  -1361.946,  44.51220, 17.00,  0.10366,  0.03049,
377.44444,  0.0,  0.0003485942!
TP130V16 !SIGYZI = 0.,0.!
TP130V16 !FMFAC = 1.! !END!
CEF391   !SRCNAM  = CEF391  !
CEF391   !X =   255.278,  -1333.130,  6.09756, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003328445!
CEF391   !SIGYZI = 0.,0.!
CEF391   !FMFAC = 1.! !END!
VETK109  !SRCNAM  = VETK109 !
VETK109  !X =   253.245,  -1333.447,  14.63415, 10.95,  0.91463,  0.00305,
295.22222,  0.0,  0.0003275946!
VETK109  !SIGYZI = 0.,0.!
VETK109  !FMFAC = 1.! !END!
FWFB4005 !SRCNAM  = FWFB4005!
FWFB4005 !X =   244.059,  -1330.986,  15.24390, 16.60,  0.91463,  0.00305,
293.77222,  0.0,  0.0003233947!
FWFB4005 !SIGYZI = 0.,0.!
FWFB4005 !FMFAC = 1.! !END!
CE472    !SRCNAM  = CE472   !
CE472    !X =   255.937,  -1333.048,  3.04878, 7.93,  0.01000,  0.01000,
294.00000,  0.0,  0.0003191947!
CE472    !SIGYZI = 0.,0.!
CE472    !FMFAC = 1.! !END!
CE662    !SRCNAM  = CE662   !
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CE662    !X =   255.806,  -1333.238,  9.14634, 8.25,  0.91463,  0.00305,
298.55556,  0.0,  0.0003181447!
CE662    !SIGYZI = 0.,0.!
CE662    !FMFAC = 1.! !END!
FWFB18   !SRCNAM  = FWFB18  !
FWFB18   !X =   245.902,  -1330.806,  11.89024, 14.76,  0.91463,  0.00305,
297.09444,  0.0,  0.0003170948!
FWFB18   !SIGYZI = 0.,0.!
FWFB18   !FMFAC = 1.! !END!
CW572T8  !SRCNAM  = CW572T8 !
CW572T8  !X =   248.344,  -1332.977,  2.98780, 4.64,  0.91463,  0.00305,
305.22222,  0.0,  0.0003139448!
CW572T8  !SIGYZI = 0.,0.!
CW572T8  !FMFAC = 1.! !END!
CEF089   !SRCNAM  = CEF089  !
CEF089   !X =   255.702,  -1333.461,  12.19512, 8.11,  4.57317,  4.57317,
309.66667,  0.0,  0.0003139448!
CEF089   !SIGYZI = 0.,0.!
CEF089   !FMFAC = 1.! !END!
SH18     !SRCNAM  = SH18    !
SH18     !X =   241.866,  -1335.111,  8.53659, 18.00,  0.60976,  4.63415,
569.11111,  0.0,  0.0003118448!
SH18     !SIGYZI = 0.,0.!
SH18     !FMFAC = 1.! !END!
TP129V26 !SRCNAM  = TP129V26!
TP129V26 !X =   216.811,  -1362.035,  12.19512, 16.00,  0.91463,  0.30488,
321.88889,  0.0,  0.0003118448!
TP129V26 !SIGYZI = 0.,0.!
TP129V26 !FMFAC = 1.! !END!
EQWWC1   !SRCNAM  = EQWWC1  !
EQWWC1   !X =   239.060,  -1333.635,  0.91463, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0003055449!
EQWWC1   !SIGYZI = 0.,0.!
EQWWC1   !FMFAC = 1.! !END!
CE475    !SRCNAM  = CE475   !
CE475    !X =   256.022,  -1333.077,  4.57317, 7.74,  0.91463,  0.00305,
298.55556,  0.0,  0.0003023950!
CE475    !SIGYZI = 0.,0.!
CE475    !FMFAC = 1.! !END!
CE476    !SRCNAM  = CE476   !
CE476    !X =   255.994,  -1333.078,  4.57317, 7.90,  0.91463,  0.00305,
298.55556,  0.0,  0.0003023950!
CE476    !SIGYZI = 0.,0.!
CE476    !FMFAC = 1.! !END!
CE477    !SRCNAM  = CE477   !
CE477    !X =   256.022,  -1333.077,  4.87805, 7.74,  0.91463,  0.00101,
298.55556,  0.0,  0.0003023950!
CE477    !SIGYZI = 0.,0.!
CE477    !FMFAC = 1.! !END!
CE676    !SRCNAM  = CE676   !
CE676    !X =   255.807,  -1333.270,  10.67073, 8.42,  0.91463,  0.00305,
298.55556,  0.0,  0.0003002950!
CE676    !SIGYZI = 0.,0.!
CE676    !FMFAC = 1.! !END!
CE222    !SRCNAM  = CE222   !
CE222    !X =   255.479,  -1333.405,  13.10976, 8.62,  0.91463,  1.71037,
533.00000,  0.0,  0.0003002950!
CE222    !SIGYZI = 0.,0.!
CE222    !FMFAC = 1.! !END!
EQ31     !SRCNAM  = EQ31    !
EQ31     !X =   239.041,  -1333.886,  34.75610, 18.00,  0.91463,  1.42988,
534.11111,  0.0,  0.0002960951!
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EQ31     !SIGYZI = 0.,0.!
EQ31     !FMFAC = 1.! !END!
FETMPENG !SRCNAM  = FETMPENG!
FETMPENG !X =   255.963,  -1333.859,  1.82927, 9.00,  0.04878,  2.92683,
644.11111,  0.0,  0.0002939951!
FETMPENG !SIGYZI = 0.,0.!
FETMPENG !FMFAC = 1.! !END!
TP111EFF !SRCNAM  = TP111EFF!
TP111EFF !X =   216.938,  -1361.625,  0.91463, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002866453!
TP111EFF !SIGYZI = 0.,0.!
TP111EFF !FMFAC = 1.! !END!
TP111T35 !SRCNAM  = TP111T35!
TP111T35 !X =   217.612,  -1361.981,  16.46341, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0002834953!
TP111T35 !SIGYZI = 0.,0.!
TP111T35 !FMFAC = 1.! !END!
EQ7      !SRCNAM  = EQ7     !
EQ7      !X =   239.125,  -1333.945,  25.60976, 18.00,  0.60976,  1.74085,
505.22222,  0.0,  0.0002813953!
EQ7      !SIGYZI = 0.,0.!
EQ7      !FMFAC = 1.! !END!
FW10FA10 !SRCNAM  = FW10FA10!
FW10FA10 !X =   245.925,  -1330.680,  7.31707, 14.81,  0.91463,  0.00305,
298.22222,  0.0,  0.0002803454!
FW10FA10 !SIGYZI = 0.,0.!
FW10FA10 !FMFAC = 1.! !END!
CEF4600  !SRCNAM  = CEF4600 !
CEF4600  !X =   255.898,  -1333.517,  4.57317, 8.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002782454!
CEF4600  !SIGYZI = 0.,0.!
CEF4600  !FMFAC = 1.! !END!
VEQ11H30 !SRCNAM  = VEQ11H30!
VEQ11H30 !X =   252.745,  -1333.368,  24.08537, 9.89,  1.21951,  4.14329,
513.55556,  0.0,  0.0002750955!
VEQ11H30 !SIGYZI = 0.,0.!
VEQ11H30 !FMFAC = 1.! !END!
FE25     !SRCNAM  = FE25    !
FE25     !X =   255.931,  -1333.703,  22.86585, 9.00,  0.75610,  5.97561,
577.44444,  0.0,  0.0002677456!
FE25     !SIGYZI = 0.,0.!
FE25     !FMFAC = 1.! !END!
CW573ME1 !SRCNAM  = CW573ME1!
CW573ME1 !X =   248.385,  -1333.443,  68.59756, 9.24,  0.10000,  0.01000,
810.77778,  0.0,  0.0002677456!
CW573ME1 !SIGYZI = 0.,0.!
CW573ME1 !FMFAC = 1.! !END!
TP124V60 !SRCNAM  = TP124V60!
TP124V60 !X =   216.832,  -1361.785,  5.18293, 17.00,  0.91463,  0.00305,
299.66667,  0.0,  0.0002645956!
TP124V60 !SIGYZI = 0.,0.!
TP124V60 !FMFAC = 1.! !END!
TP99IBUF !SRCNAM  = TP99IBUF!
TP99IBUF !X =   216.798,  -1361.566,  1.52439, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002614457!
TP99IBUF !SIGYZI = 0.,0.!
TP99IBUF !FMFAC = 1.! !END!
VWTK51   !SRCNAM  = VWTK51  !
VWTK51   !X =   249.679,  -1332.436,  14.32927, 4.00,  0.30488,  0.00305,
298.00000,  0.0,  0.0002572457!
VWTK51   !SIGYZI = 0.,0.!
VWTK51   !FMFAC = 1.! !END!
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SH23     !SRCNAM  = SH23    !
SH23     !X =   241.892,  -1335.079,  6.09756, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002509459!
SH23     !SIGYZI = 0.,0.!
SH23     !FMFAC = 1.! !END!
VWENG726 !SRCNAM  = VWENG726!
VWENG726 !X =   249.541,  -1332.440,  9.14634, 4.00,  0.15244,  3.04878,
588.55556,  0.0,  0.0002509459!
VWENG726 !SIGYZI = 0.,0.!
VWENG726 !FMFAC = 1.! !END!
TP121T36 !SRCNAM  = TP121T36!
TP121T36 !X =   216.457,  -1355.140,  36.58537, 22.00,  1.82927,  9.87805,
305.22222,  0.0,  0.0002477959!
TP121T36 !SIGYZI = 0.,0.!
TP121T36 !FMFAC = 1.! !END!
CD9811   !SRCNAM  = CD9811  !
CD9811   !X =   254.095,  -1334.136,  10.67073, 12.00,  0.91463,  0.00305,
296.88889,  0.0,  0.0002477959!
CD9811   !SIGYZI = 0.,0.!
CD9811   !FMFAC = 1.! !END!
VETK210  !SRCNAM  = VETK210 !
VETK210  !X =   254.604,  -1332.810,  7.31707, 8.86,  0.91463,  0.00305,
295.22222,  0.0,  0.0002414960!
VETK210  !SIGYZI = 0.,0.!
VETK210  !FMFAC = 1.! !END!
MIL1     !SRCNAM  = MIL1    !
MIL1     !X =   281.474,  -1337.648,  3.04878, 4.00,  2.13415,  0.00305,
295.22222,  0.0,  0.0002404460!
MIL1     !SIGYZI = 0.,0.!
MIL1     !FMFAC = 1.! !END!
SA54     !SRCNAM  = SA54    !
SA54     !X =   271.868,  -1324.155,  19.81707, 6.00,  0.91463,  11.28049,
377.44444,  0.0,  0.0002393960!
SA54     !SIGYZI = 0.,0.!
SA54     !FMFAC = 1.! !END!
VETK211  !SRCNAM  = VETK211 !
VETK211  !X =   254.604,  -1332.810,  7.31707, 8.86,  0.91463,  0.00305,
295.22222,  0.0,  0.0002383461!
VETK211  !SIGYZI = 0.,0.!
VETK211  !FMFAC = 1.! !END!
VW41FSCO !SRCNAM  = VW41FSCO!
VW41FSCO !X =   249.882,  -1332.740,  6.09756, 7.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002330961!
VW41FSCO !SIGYZI = 0.,0.!
VW41FSCO !FMFAC = 1.! !END!
SH6      !SRCNAM  = SH6     !
SH6      !X =   241.921,  -1335.109,  15.85366, 18.00,  0.76220,  2.83537,
535.77778,  0.0,  0.0002267963!
SH6      !SIGYZI = 0.,0.!
SH6      !FMFAC = 1.! !END!
FWF31    !SRCNAM  = FWF31   !
FWF31    !X =   245.890,  -1331.304,  0.91463, 12.52,  0.01000,  0.01000,
294.00000,  0.0,  0.0002194464!
FWF31    !SIGYZI = 0.,0.!
FWF31    !FMFAC = 1.! !END!
SH13     !SRCNAM  = SH13    !
SH13     !X =   241.921,  -1335.109,  23.78049, 18.00,  1.60061,  23.01829,
616.33333,  0.0,  0.0002157714!
SH13     !SIGYZI = 0.,0.!
SH13     !FMFAC = 1.! !END!
EQ8A     !SRCNAM  = EQ8A    !
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EQ8A     !X =   239.125,  -1333.945,  19.51220, 18.00,  1.06707,  2.28049,
534.11111,  0.0,  0.0002152464!
EQ8A     !SIGYZI = 0.,0.!
EQ8A     !FMFAC = 1.! !END!
TP129T51 !SRCNAM  = TP129T51!
TP129T51 !X =   216.784,  -1362.036,  17.07317, 16.07,  0.07622,  25.00000,
377.44444,  0.0,  0.0002141965!
TP129T51 !SIGYZI = 0.,0.!
TP129T51 !FMFAC = 1.! !END!
FEF72    !SRCNAM  = FEF72   !
FEF72    !X =   255.769,  -1333.833,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0002120965!
FEF72    !SIGYZI = 0.,0.!
FEF72    !FMFAC = 1.! !END!
TP111T31 !SRCNAM  = TP111T31!
TP111T31 !X =   217.612,  -1361.981,  16.76829, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0002099965!
TP111T31 !SIGYZI = 0.,0.!
TP111T31 !FMFAC = 1.! !END!
CEGRPROU !SRCNAM  = CEGRPROU!
CEGRPROU !X =   255.678,  -1333.555,  0.91463, 8.86,  0.01000,  0.01000,
294.00000,  0.0,  0.0002078966!
CEGRPROU !SIGYZI = 0.,0.!
CEGRPROU !FMFAC = 1.! !END!
DP237    !SRCNAM  = DP237   !
DP237    !X =   273.333,  -1325.072,  23.47561, 4.00,  0.60976,  5.12195,
573.00000,  0.0,  0.0002068466!
DP237    !SIGYZI = 0.,0.!
DP237    !FMFAC = 1.! !END!
TP111T36 !SRCNAM  = TP111T36!
TP111T36 !X =   217.612,  -1361.981,  9.14634, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0002068466!
TP111T36 !SIGYZI = 0.,0.!
TP111T36 !FMFAC = 1.! !END!
VETK113  !SRCNAM  = VETK113 !
VETK113  !X =   254.443,  -1332.939,  10.97561, 9.75,  0.91463,  0.00305,
295.22222,  0.0,  0.0002057966!
VETK113  !SIGYZI = 0.,0.!
VETK113  !FMFAC = 1.! !END!
VE27H1   !SRCNAM  = VE27H1  !
VE27H1   !X =   254.334,  -1333.004,  22.56098, 10.11,  0.99085,  3.84146,
533.00000,  0.0,  0.0002052716!
VE27H1   !SIGYZI = 0.,0.!
VE27H1   !FMFAC = 1.! !END!
CEGRP909 !SRCNAM  = CEGRP909!
CEGRP909 !X =   249.959,  -1333.424,  0.91463, 13.57,  0.01000,  0.01000,
294.00000,  0.0,  0.0002036966!
CEGRP909 !SIGYZI = 0.,0.!
CEGRP909 !FMFAC = 1.! !END!
VWENG725 !SRCNAM  = VWENG725!
VWENG725 !X =   249.513,  -1332.441,  9.14634, 4.00,  0.15244,  3.04878,
588.55556,  0.0,  0.0002026466!
VWENG725 !SIGYZI = 0.,0.!
VWENG725 !FMFAC = 1.! !END!
CW572LS3 !SRCNAM  = CW572LS3!
CW572LS3 !X =   248.289,  -1333.010,  1.00000, 5.11,  0.01000,  0.01000,
294.00000,  0.0,  0.0002005467!
CW572LS3 !SIGYZI = 0.,0.!
CW572LS3 !FMFAC = 1.! !END!
SH19     !SRCNAM  = SH19    !
SH19     !X =   241.921,  -1335.109,  6.70732, 18.00,  0.30488,  3.01829,
666.33333,  0.0,  0.0001994967!
```

```
SH19     !SIGYZI = 0.,0.!
SH19     !FMFAC = 1.! !END!
EQ54     !SRCNAM  = EQ54    !
EQ54     !X =   239.055,  -1333.479,  7.31707, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0001994967!
EQ54     !SIGYZI = 0.,0.!
EQ54     !FMFAC = 1.! !END!
TP126ACH !SRCNAM  = TP126ACH!
TP126ACH !X =   217.355,  -1361.675,  9.14634, 16.06,  0.91463,  0.00305,
296.88889,  0.0,  0.0001984467!
TP126ACH !SIGYZI = 0.,0.!
TP126ACH !FMFAC = 1.! !END!
WT116    !SRCNAM  = WT116   !
WT116    !X =   254.522,  -1333.686,  12.80488, 12.00,  0.91463,  0.00305,
310.77778,  0.0,  0.0001973967!
WT116    !SIGYZI = 0.,0.!
WT116    !FMFAC = 1.! !END!
FEF76    !SRCNAM  = FEF76   !
FEF76    !X =   255.796,  -1333.801,  3.04878, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001963468!
FEF76    !SIGYZI = 0.,0.!
FEF76    !FMFAC = 1.! !END!
CEF451   !SRCNAM  = CEF451  !
CEF451   !X =   255.935,  -1332.985,  3.04878, 7.74,  0.01000,  0.01000,
294.00000,  0.0,  0.0001900469!
CEF451   !SIGYZI = 0.,0.!
CEF451   !FMFAC = 1.! !END!
VETK114  !SRCNAM  = VETK114 !
VETK114  !X =   254.443,  -1332.939,  10.97561, 9.75,  0.91463,  0.00305,
295.22222,  0.0,  0.0001847969!
VETK114  !SIGYZI = 0.,0.!
VETK114  !FMFAC = 1.! !END!
TPFS12A  !SRCNAM  = TPFS12A !
TPFS12A  !X =   216.538,  -1362.198,  3.04878, 16.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001837470!
TPFS12A  !SIGYZI = 0.,0.!
TPFS12A  !FMFAC = 1.! !END!
VW13F    !SRCNAM  = VW13F   !
VW13F    !X =   249.826,  -1332.711,  6.09756, 6.40,  0.01000,  0.01000,
294.00000,  0.0,  0.0001805970!
VW13F    !SIGYZI = 0.,0.!
VW13F    !FMFAC = 1.! !END!
FBFUG    !SRCNAM  = FBFUG   !
FBFUG    !X =   270.343,  -1349.933,  0.91463, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001795470!
FBFUG    !SIGYZI = 0.,0.!
FBFUG    !FMFAC = 1.! !END!
FTFUG1   !SRCNAM  = FTFUG1  !
FTFUG1   !X =   277.825,  -1331.250,  6.09756, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001784970!
FTFUG1   !SIGYZI = 0.,0.!
FTFUG1   !FMFAC = 1.! !END!
MIFUG    !SRCNAM  = MIFUG   !
MIFUG    !X =   281.474,  -1337.648,  4.57317, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001774471!
MIFUG    !SIGYZI = 0.,0.!
MIFUG    !FMFAC = 1.! !END!
FES85    !SRCNAM  = FES85   !
FES85    !X =   255.984,  -1333.639,  60.67073, 8.45,  0.46037,  22.86585,
644.11111,  0.0,  0.0001774471!
FES85    !SIGYZI = 0.,0.!
FES85    !FMFAC = 1.! !END!
```

```
TPFT101  !SRCNAM  = TPFT101 !
TPFT101  !X =   216.512,  -1362.261,  3.04878, 16.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001763971!
TPFT101  !SIGYZI = 0.,0.!
TPFT101  !FMFAC = 1.! !END!
CEGRPFIR !SRCNAM  = CEGRPFIR!
CEGRPFIR !X =   255.678,  -1333.555,  0.91463, 8.86,  0.01000,  0.01000,
294.00000,  0.0,  0.0001742971!
CEGRPFIR !SIGYZI = 0.,0.!
CEGRPFIR !FMFAC = 1.! !END!
TP129V30 !SRCNAM  = TP129V30!
TP129V30 !X =   216.755,  -1362.005,  12.19512, 16.38,  0.91463,  0.30488,
321.88889,  0.0,  0.0001721972!
TP129V30 !SIGYZI = 0.,0.!
TP129V30 !FMFAC = 1.! !END!
FW21FB21 !SRCNAM  = FW21FB21!
FW21FB21 !X =   245.743,  -1331.027,  4.87805, 15.00,  0.91463,  0.00305,
325.83889,  0.0,  0.0001721972!
FW21FB21 !SIGYZI = 0.,0.!
FW21FB21 !FMFAC = 1.! !END!
VETK334  !SRCNAM  = VETK334 !
VETK334  !X =   252.604,  -1333.279,  14.63415, 8.89,  0.91463,  0.00305,
295.22222,  0.0,  0.0001637973!
VETK334  !SIGYZI = 0.,0.!
VETK334  !FMFAC = 1.! !END!
VEQ3H4   !SRCNAM  = VEQ3H4  !
VEQ3H4   !X =   252.552,  -1333.374,  15.24390, 9.89,  1.50000,  6.48780,
598.00000,  0.0,  0.0001553974!
VEQ3H4   !SIGYZI = 0.,0.!
VEQ3H4   !FMFAC = 1.! !END!
TP125V30 !SRCNAM  = TP125V30!
TP125V30 !X =   216.863,  -1361.938,  3.04878, 16.41,  0.05183,  0.00305,
310.77778,  0.0,  0.0001522475!
TP125V30 !SIGYZI = 0.,0.!
TP125V30 !FMFAC = 1.! !END!
NAFWFSU5 !SRCNAM  = NAFWFSU5!
NAFWFSU5 !X =   271.440,  -1345.617,  1.21951, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001501475!
NAFWFSU5 !SIGYZI = 0.,0.!
NAFWFSU5 !FMFAC = 1.! !END!
TP127FUG !SRCNAM  = TP127FUG!
TP127FUG !X =   216.699,  -1361.975,  1.52439, 17.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001490975!
TP127FUG !SIGYZI = 0.,0.!
TP127FUG !FMFAC = 1.! !END!
TP130MS7 !SRCNAM  = TP130MS7!
TP130MS7 !X =   216.784,  -1362.036,  67.07317, 16.07,  0.58841,  25.30488,
333.00000,  0.0,  0.0001417477!
TP130MS7 !SIGYZI = 0.,0.!
TP130MS7 !FMFAC = 1.! !END!
FWEDENCN !SRCNAM  = FWEDENCN!
FWEDENCN !X =   245.788,  -1330.653,  3.04878, 13.93,  0.07622,  0.00305,
299.66667,  0.0,  0.0001406977!
FWEDENCN !SIGYZI = 0.,0.!
FWEDENCN !FMFAC = 1.! !END!
OCVCM6   !SRCNAM  = OCVCM6  !
OCVCM6   !X =   273.643,  -1324.469,  12.80488, 5.00,  0.25305,  13.71951,
373.00000,  0.0,  0.0001396477!
OCVCM6   !SIGYZI = 0.,0.!
OCVCM6   !FMFAC = 1.! !END!
OCVCM22  !SRCNAM  = OCVCM22 !
```

```
OCVCM22  !X =   273.743,  -1324.153,  12.80488, 5.00,  0.25305,  13.71951,
373.00000,  0.0,  0.0001396477!
OCVCM22  !SIGYZI = 0.,0.!
OCVCM22  !FMFAC = 1.! !END!
FEE12TK1 !SRCNAM  = FEE12TK1!
FEE12TK1 !X =   256.493,  -1333.155,  9.14634, 7.00,  0.91463,  0.00305,
295.22222,  0.0,  0.0001364977!
FEE12TK1 !SIGYZI = 0.,0.!
FEE12TK1 !FMFAC = 1.! !END!
FW28FB21 !SRCNAM  = FW28FB21!
FW28FB21 !X =   245.550,  -1331.004,  4.87805, 15.00,  0.91463,  0.00305,
298.21667,  0.0,  0.0001364977!
FW28FB21 !SIGYZI = 0.,0.!
FW28FB21 !FMFAC = 1.! !END!
FWFB4    !SRCNAM  = FWFB4   !
FWFB4    !X =   245.984,  -1330.772,  5.48780, 14.18,  0.91463,  0.00305,
297.68889,  0.0,  0.0001364977!
FWFB4    !SIGYZI = 0.,0.!
FWFB4    !FMFAC = 1.! !END!
TP250T32 !SRCNAM  = TP250T32!
TP250T32 !X =   216.557,  -1361.854,  6.09756, 17.00,  0.15244,  0.30488,
299.66667,  0.0,  0.0001364977!
TP250T32 !SIGYZI = 0.,0.!
TP250T32 !FMFAC = 1.! !END!
FWF61    !SRCNAM  = FWF61   !
FWF61    !X =   245.723,  -1331.279,  0.91463, 14.87,  0.01000,  0.01000,
294.00000,  0.0,  0.0001322978!
FWF61    !SIGYZI = 0.,0.!
FWF61    !FMFAC = 1.! !END!
NASET003 !SRCNAM  = NASET003!
NASET003 !X =   271.165,  -1345.657,  15.24390, 4.00,  1.06707,  15.24390,
644.11111,  0.0,  0.0001312478!
NASET003 !SIGYZI = 0.,0.!
NASET003 !FMFAC = 1.! !END!
NASET004 !SRCNAM  = NASET004!
NASET004 !X =   271.165,  -1345.657,  15.24390, 4.00,  1.06707,  15.24390,
644.11111,  0.0,  0.0001312478!
NASET004 !SIGYZI = 0.,0.!
NASET004 !FMFAC = 1.! !END!
NASET014 !SRCNAM  = NASET014!
NASET014 !X =   271.440,  -1345.617,  15.24390, 4.00,  1.06707,  15.24390,
644.11111,  0.0,  0.0001312478!
NASET014 !SIGYZI = 0.,0.!
NASET014 !FMFAC = 1.! !END!
NASET013 !SRCNAM  = NASET013!
NASET013 !X =   271.440,  -1345.617,  15.24390, 4.00,  1.06707,  15.24390,
644.11111,  0.0,  0.0001312478!
NASET013 !SIGYZI = 0.,0.!
NASET013 !FMFAC = 1.! !END!
TP111T32 !SRCNAM  = TP111T32!
TP111T32 !X =   217.612,  -1361.981,  9.14634, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0001312478!
TP111T32 !SIGYZI = 0.,0.!
TP111T32 !FMFAC = 1.! !END!
FESURFCL !SRCNAM  = FESURFCL!
FESURFCL !X =   255.882,  -1333.893,  1.00030, 9.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001291479!
FESURFCL !SIGYZI = 0.,0.!
FESURFCL !FMFAC = 1.! !END!
CE223    !SRCNAM  = CE223   !
CE223    !X =   255.479,  -1333.405,  12.80488, 8.62,  0.60976,  1.19207,
533.00000,  0.0,  0.0001291479!
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```
CE223    !SIGYZI = 0.,0.!
CE223    !FMFAC = 1.! !END!
CEF441   !SRCNAM  = CEF441  !
CEF441   !X =   255.905,  -1332.893,  1.00000, 6.13,  0.10000,  0.01000,
294.00000,  0.0,  0.0001270479!
CEF441   !SIGYZI = 0.,0.!
CEF441   !FMFAC = 1.! !END!
EQPBRENG !SRCNAM  = EQPBRENG!
EQPBRENG !X =   239.261,  -1333.880,  0.91463, 18.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001259979!
EQPBRENG !SIGYZI = 0.,0.!
EQPBRENG !FMFAC = 1.! !END!
TPFT28   !SRCNAM  = TPFT28  !
TPFT28   !X =   216.620,  -1362.165,  3.04878, 16.07,  0.01000,  0.01000,
294.00000,  0.0,  0.0001217980!
TPFT28   !SIGYZI = 0.,0.!
TPFT28   !FMFAC = 1.! !END!
TPS17    !SRCNAM  = TPS17   !
TPS17    !X =   216.348,  -1362.297,  0.30488, 16.00,  0.91463,  0.00305,
321.88889,  0.0,  0.0001196980!
TPS17    !SIGYZI = 0.,0.!
TPS17    !FMFAC = 1.! !END!
CEF445   !SRCNAM  = CEF445  !
CEF445   !X =   255.902,  -1332.800,  1.00000, 1.50,  0.10000,  0.01000,
294.00000,  0.0,  0.0001196980!
CEF445   !SIGYZI = 0.,0.!
CEF445   !FMFAC = 1.! !END!
FTSURFPR !SRCNAM  = FTSURFPR!
FTSURFPR !X =   277.825,  -1331.250,  1.00030, 4.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001165481!
FTSURFPR !SIGYZI = 0.,0.!
FTSURFPR !FMFAC = 1.! !END!
TP129V16 !SRCNAM  = TP129V16!
TP129V16 !X =   216.726,  -1362.006,  6.09756, 16.63,  0.91463,  0.00305,
388.55556,  0.0,  0.0001154981!
TP129V16 !SIGYZI = 0.,0.!
TP129V16 !FMFAC = 1.! !END!
VWENG5OP !SRCNAM  = VWENG5OP!
VWENG5OP !X =   249.356,  -1332.695,  12.19512, 4.00,  0.30488,  8.35366,
588.55556,  0.0,  0.0001112982!
VWENG5OP !SIGYZI = 0.,0.!
VWENG5OP !FMFAC = 1.! !END!
TP129T52 !SRCNAM  = TP129T52!
TP129T52 !X =   216.811,  -1362.035,  17.07317, 16.00,  0.07622,  19.51220,
377.44444,  0.0,  0.0001091982!
TP129T52 !SIGYZI = 0.,0.!
TP129T52 !FMFAC = 1.! !END!
FEE11TKH !SRCNAM  = FEE11TKH!
FEE11TKH !X =   255.493,  -1333.842,  14.63415, 9.00,  0.91463,  0.00305,
302.69444,  0.0,  0.0001081482!
FEE11TKH !SIGYZI = 0.,0.!
FEE11TKH !FMFAC = 1.! !END!
FWF38    !SRCNAM  = FWF38   !
FWF38    !X =   245.718,  -1331.124,  0.91463, 15.00,  0.01000,  0.01000,
294.00000,  0.0,  0.0001081482!
FWF38    !SIGYZI = 0.,0.!
FWF38    !FMFAC = 1.! !END!
EQ18     !SRCNAM  = EQ18    !
EQ18     !X =   238.918,  -1333.453,  7.31707, 18.00,  0.91463,  0.00305,
298.00000,  0.0,  0.0001081482!
EQ18     !SIGYZI = 0.,0.!
EQ18     !FMFAC = 1.! !END!
```

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VE83CT1  !SRCNAM  = VE83CT1 !
VE83CT1  !X =   254.385,  -1332.817,  12.19512, 9.00,  6.09756,  9.14634,
294.11111,  0.0,  0.0001081482!
VE83CT1  !SIGYZI = 0.,0.!
VE83CT1  !FMFAC = 1.! !END!
OCEGEN3  !SRCNAM  = OCEGEN3 !
OCEGEN3  !X =   273.543,  -1324.753,  4.26829, 5.00,  0.21646,  76.21951,
755.22222,  0.0,  0.0001060482!
OCEGEN3  !SIGYZI = 0.,0.!
OCEGEN3  !FMFAC = 1.! !END!
GP104    !SRCNAM  = GP104   !
GP104    !X =   271.888,  -1323.936,  60.67073, 6.00,  1.82927,  23.17073,
425.22222,  0.0,  0.0000796937!
GP104    !SIGYZI = 0.,0.!
GP104    !FMFAC = 1.! !END!
GP103    !SRCNAM  = GP103   !
GP103    !X =   271.916,  -1323.966,  60.67073, 6.00,  1.82927,  20.12195,
425.22222,  0.0,  0.0000136498!
GP103    !SIGYZI = 0.,0.!
GP103    !FMFAC = 1.! !END!
BD10     !SRCNAM  = BD10    !
BD10     !X =   267.839,  -1356.110,  7.62195, 4.00,  0.91463,  0.00305,
294.66667,  0.0,  0.0000012390!
BD10     !SIGYZI = 0.,0.!
BD10     !FMFAC = 1.! !END!
BD11     !SRCNAM  = BD11    !
BD11     !X =   267.839,  -1356.110,  2.13415, 4.00,  0.91463,  0.00305,
294.66667,  0.0,  0.0000005302!
BD11     !SIGYZI = 0.,0.!
BD11     !FMFAC = 1.! !END!
```

----

[a] Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

SRCNAM is a 12-character name for a source (No default)

X is an array holding the source data listed by the column headings (No default)

SIGYZI is an array holding the initial sigma-y and sigma-z (m) (Default: 0.,0.)

FMFAC is a vertical momentum flux factor (0. or 1.0) used to represent the effect of rain-caps or other physical configurations that reduce momentum rise associated with the actual exit velocity. (Default: 1.0 -- full momentum used)

ZPLTFM is the platform height (m) for sources influenced by an isolated structure that has a significant open area between the surface and the bulk of the structure, such as an offshore oil platform. The Base Elevation is that of the surface (ground or ocean), and the Stack Height is the release height above the Base (not above the platform). Building heights entered in Subgroup 13c must be those of the buildings on the platform, measured from the platform deck. ZPLTFM is used only with MBDW=1 (ISC downwash method) for sources with building downwash. (Default: 0.0)

[b]

```
     0. = No building downwash modeled
     1. = Downwash modeled for buildings resting on the surface
     2. = Downwash modeled for buildings raised above the surface (ZPLTFM >
0.)
     NOTE: must be entered as a REAL number (i.e., with decimal point)

    c
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by IPTU
     (e.g. 1 for g/s).

---------------
Subgroup (13c)
---------------

           BUILDING DIMENSION DATA FOR SOURCES SUBJECT TO DOWNWASH
           -------------------------------------------------------
Source                                                                    a
 No.       Effective building height, width, length and X/Y offset (in
meters)
           every 10 degrees.  LENGTH, XBADJ, and YBADJ are only needed for
           MBDW=2 (PRIME downwash option)
------     ------------------------------------------------------------------
--


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    a
     Building height, width, length, and X/Y offset from the source are
treated
     as a separate input subgroup for each source and therefore must end with
     an input group terminator.  The X/Y offset is the position, relative to
the
     stack, of the center of the upwind face of the projected building, with
the
     x-axis pointing along the flow direction.

---------------
Subgroup (13d)
---------------
                                                        a
          POINT SOURCE: VARIABLE EMISSIONS DATA
          ---------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 13b.  Factors entered multiply the rates in 13b.
     Skip sources here that have constant emissions.  For more elaborate
     variation in source parameters, use PTEMARB.DAT and NPT2 > 0.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
```

```
          5 =       Temperature   (12 scaling factors, where temperature
                                   classes have upper bounds (C) of:
                                   0, 5, 10, 15, 20, 25, 30, 35, 40,
                                   45, 50, 50+)



--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.


-----------------------------------------------------------------------------
--


INPUT GROUPS: 14a, 14b, 14c, 14d -- Area source parameters
--------------------------------

---------------
Subgroup (14a)
---------------

     Number of polygon area sources with
     parameters specified below (NAR1)       No default  !  NAR1 =  0   !

     Units used for area source
     emissions below            (IARU)       Default: 1  !  IARU =   1  !
           1 =        g/m**2/s
           2 =       kg/m**2/hr
           3 =       lb/m**2/hr
           4 =     tons/m**2/yr
           5 =     Odour Unit * m/s  (vol. flux/m**2 of odour compound)
           6 =     Odour Unit * m/min
           7 =     metric tons/m**2/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (14d)        (NSAR1) Default: 0  !  NSAR1 =  0  !

     Number of buoyant polygon area sources
     with variable location and emission
     parameters (NAR2)                      No default  !  NAR2 =  0   !
     (If NAR2 > 0, ALL parameter data for
     these sources are read from the file: BAEMARB.DAT)

!END!

---------------
Subgroup (14b)
---------------
                                             a
          AREA SOURCE: CONSTANT DATA
          ----------------------------
                                                                  b
Source           Effect.    Base      Initial    Emission
 No.             Height   Elevation   Sigma z     Rates
                   (m)       (m)        (m)
-------          ------    ------     --------   ---------
```

```
--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.
    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by IARU
     (e.g. 1 for g/m**2/s).
```

```
---------------
Subgroup (14c)
---------------
```

```
           COORDINATES (km) FOR EACH VERTEX(4) OF EACH POLYGON
           --------------------------------------------------------
Source                                                                 a
 No.       Ordered list of X followed by list of Y, grouped by source
------     ------------------------------------------------------------
```

```
--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.
```

```
---------------
Subgroup (14d)
---------------
                                                  a
          AREA SOURCE: VARIABLE EMISSIONS DATA
          ---------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 14b.  Factors entered multiply the rates in 14b.
     Skip sources here that have constant emissions.  For more elaborate
     variation in source parameters, use BAEMARB.DAT and NAR2 > 0.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
           5 =       Temperature   (12 scaling factors, where temperature
                                    classes have upper bounds (C) of:
                                    0, 5, 10, 15, 20, 25, 30, 35, 40,
                                    45, 50, 50+)
```

```
--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.
```

```
---------------------------------------------------------------------------------
--

INPUT GROUPS: 15a, 15b, 15c -- Line source parameters
---------------------------

---------------
Subgroup (15a)
---------------

     Number of buoyant line sources
     with variable location and emission
     parameters (NLN2)                            No default  !  NLN2 =  0
!

     (If NLN2 > 0, ALL parameter data for
      these sources are read from the file: LNEMARB.DAT)

     Number of buoyant line sources (NLINES)       No default   ! NLINES =
0  !

     Units used for line source
     emissions below                (ILNU)         Default: 1  !  ILNU =   1
!
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (15c)        (NSLN1) Default: 0  !  NSLN1 =  0  !

     Maximum number of segments used to model
     each line (MXNSEG)                            Default: 7   ! MXNSEG =
7  !

     The following variables are required only if NLINES > 0.  They are
     used in the buoyant line source plume rise calculations.

        Number of distances at which               Default: 6   ! NLRISE =
6  !
        transitional rise is computed

        Average building length (XL)               No default   ! XL = .0 !
                                                   (in meters)

        Average building height (HBL)              No default   ! HBL = .0 !
                                                   (in meters)

        Average building width (WBL)               No default   ! WBL = .0 !
                                                   (in meters)

        Average line source width (WML)            No default   ! WML = .0 !
                                                   (in meters)
```

```
        Average separation between buildings (DXL)  No default   ! DXL = .0 !
                                                    (in meters)

        Average buoyancy parameter (FPRIMEL)        No default   ! FPRIMEL =
.0 !
                                                    (in m**4/s**3)

!END!

---------------
Subgroup (15b)
---------------

          BUOYANT LINE SOURCE: CONSTANT DATA
          ----------------------------------

a
Source     Beg. X      Beg. Y      End. X    End. Y     Release    Base
Emission
 No.     Coordinate  Coordinate  Coordinate Coordinate  Height    Elevation
Rates
            (km)        (km)        (km)       (km)       (m)       (m)
------   ----------  ----------  ---------  ----------  -------   ---------
---------

--------

    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.

    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by ILNTU
     (e.g. 1 for g/s).

---------------
Subgroup (15c)
---------------
                                                     a
          BUOYANT LINE SOURCE: VARIABLE EMISSIONS DATA
          ----------------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 15b.  Factors entered multiply the rates in 15b.
     Skip sources here that have constant emissions.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
           5 =       Temperature   (12 scaling factors, where temperature
                                    classes have upper bounds (C) of:
                                    0, 5, 10, 15, 20, 25, 30, 35, 40,
```

```
                                              45, 50, 50+)


--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.


-----------------------------------------------------------------------------
--


INPUT GROUPS: 16a, 16b, 16c -- Volume source parameters
---------------------------

---------------
Subgroup (16a)
---------------

     Number of volume sources with
     parameters provided in 16b,c (NVL1)     No default  !  NVL1 =  0   !

     Units used for volume source
     emissions below in 16b       (IVLU)     Default: 1  !  IVLU =   1  !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (16c)      (NSVL1)    Default: 0  !  NSVL1 =  0  !

     Number of volume sources with
     variable location and emission
     parameters                   (NVL2)     No default  !  NVL2 =   0   !

     (If NVL2 > 0, ALL parameter data for
      these sources are read from the VOLEMARB.DAT file(s) )

!END!

---------------
Subgroup (16b)
---------------
                                        a
           VOLUME SOURCE: CONSTANT DATA
           ------------------------------

b
         X           Y         Effect.    Base     Initial    Initial
Emission
     Coordinate  Coordinate   Height   Elevation  Sigma y    Sigma z
Rates
        (km)       (km)         (m)       (m)        (m)       (m)
```

```
     ----------  ----------   ------    ------    --------   --------   -----
---


--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.

    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by IVLU
     (e.g. 1 for g/s).

---------------
Subgroup (16c)
---------------
                                                 a
          VOLUME SOURCE: VARIABLE EMISSIONS DATA
          ----------------------------------------

     Use this subgroup to describe temporal variations in the emission
     rates given in 16b.  Factors entered multiply the rates in 16b.
     Skip sources here that have constant emissions.  For more elaborate
     variation in source parameters, use VOLEMARB.DAT and NVL2 > 0.

     IVARY determines the type of variation, and is source-specific:
     (IVARY)                                Default: 0
           0 =       Constant
           1 =       Diurnal cycle (24 scaling factors: hours 1-24)
           2 =       Monthly cycle (12 scaling factors: months 1-12)
           3 =       Hour & Season (4 groups of 24 hourly scaling factors,
                                    where first group is DEC-JAN-FEB)
           4 =       Speed & Stab. (6 groups of 6 scaling factors, where
                                    first group is Stability Class A,
                                    and the speed classes have upper
                                    bounds (m/s) defined in Group 12
           5 =       Temperature   (12 scaling factors, where temperature
                                    classes have upper bounds (C) of:
                                    0, 5, 10, 15, 20, 25, 30, 35, 40,
                                    45, 50, 50+)



--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.


-----------------------------------------------------------------------------
--

INPUT GROUPS: 17a & 17b -- Non-gridded (discrete) receptor information
-----------------------

---------------
Subgroup (17a)
---------------

     Number of non-gridded receptors (NREC)  No default  !  NREC =  141  !
```

```
!END!

---------------
Subgroup (17b)
---------------
                                              a
           NON-GRIDDED (DISCRETE) RECEPTOR DATA
           ------------------------------------

                        X            Y          Ground         Height   b
Receptor        Coordinate   Coordinate     Elevation     Above Ground
  No.              (km)         (km)           (m)            (m)
--------        ----------   ----------     ---------     ------------

     1 ! X =       262.135,    -1346.022,         5.4,          1.6!  !END!  pop
     2 ! X =       256.014,    -1338.352,           9,          1.6!  !END!  pop
     3 ! X =       255.256,    -1339.500,           9,          1.6!  !END!  pop
     4 ! X =       256.742,    -1339.340,           9,          1.6!  !END!  pop
     5 ! X =       257.301,    -1341.233,         8.1,          1.6!  !END!  pop
     6 ! X =       264.440,    -1322.571,          12,          1.6!  !END!  pop
     7 ! X =       261.011,    -1351.231,           4,          1.6!  !END!  pop
     8 ! X =       276.647,    -1322.492,           4,          1.6!  !END!  pop
     9 ! X =       257.506,    -1344.487,         6.7,          1.6!  !END!  pop
    10 ! X =       265.841,    -1325.894,         8.5,          1.6!  !END!  pop
    11 ! X =       218.938,    -1359.605,        17.5,          1.6!  !END!  clinics
    12 ! X =       261.856,    -1347.968,         4.9,          1.6!  !END!  clinics
    13 ! X =       256.842,    -1345.370,           6,          1.6!  !END!  clinics
    14 ! X =       259.421,    -1339.546,         7.9,          1.6!  !END!  clinics
    15 ! X =       257.018,    -1336.737,         9.2,          1.6!  !END!  clinics
    16 ! X =       232.008,    -1336.351,          21,          1.6!  !END!  clinics
    17 ! X =       291.875,    -1328.829,           0,          1.6!  !END!  clinics
    18 ! X =       266.201,    -1322.879,         9.8,          1.6!  !END!  clinics
    19 ! X =       281.504,    -1320.767,           6,          1.6!  !END!  clinics
    20 ! X =       255.834,    -1336.704,        11.9,          1.6!  !END!  schools
    21 ! X =       258.218,    -1334.410,         7.7,          1.6!  !END!  schools
    22 ! X =       227.549,    -1339.435,          21,          1.6!  !END!  schools
    23 ! X =       256.753,    -1334.363,         8.9,          1.6!  !END!  schools
    24 ! X =       262.965,    -1343.528,           5,          1.6!  !END!  schools
    25 ! X =       255.716,    -1339.891,           9,          1.6!  !END!  schools
    26 ! X =       258.667,    -1344.823,         6.1,          1.6!  !END!  schools
    27 ! X =       231.185,    -1336.210,          21,          1.6!  !END!  schools
    28 ! X =       259.785,    -1342.663,         6.4,          1.6!  !END!  schools
    29 ! X =       258.931,    -1341.068,         7.9,          1.6!  !END!  schools
    30 ! X =       258.377,    -1343.552,         6.7,          1.6!  !END!  schools
    31 ! X =       258.392,    -1340.617,         8.1,          1.6!  !END!  schools
    32 ! X =       258.649,    -1334.927,         7.7,          1.6!  !END!  schools
    33 ! X =       258.366,    -1342.398,         7.4,          1.6!  !END!  schools
    34 ! X =       255.571,    -1339.678,           9,          1.6!  !END!  schools
    35 ! X =       258.117,    -1341.531,         7.9,          1.6!  !END!  schools
    36 ! X =       255.298,    -1335.503,        11.3,          1.6!  !END!  schools
    37 ! X =       266.667,    -1325.329,         8.1,          1.6!  !END!  schools
    38 ! X =       257.858,    -1335.202,           9,          1.6!  !END!  schools
    39 ! X =       282.118,    -1321.582,         4.3,          1.6!  !END!  schools
    40 ! X =       257.047,    -1340.879,         8.4,          1.6!  !END!  schools
    41 ! X =       259.438,    -1339.646,         7.9,          1.6!  !END!  schools
    42 ! X =       262.445,    -1344.543,         5.2,          1.6!  !END!  schools
    43 ! X =       258.066,    -1336.537,         6.9,          1.6!  !END!  schools
    44 ! X =       265.832,    -1322.643,        10.8,          1.6!  !END!  schools
    45 ! X =       265.812,    -1323.705,        10.2,          1.6!  !END!  schools
    46 ! X =       263.739,    -1345.189,           4,          1.6!  !END!  schools
    47 ! X =       260.189,    -1341.495,           6,          1.6!  !END!  schools
```

```
 48 ! X =      215.181,    -1303.068,       38.5,          1.6!  !END!  schools
 49 ! X =      257.993,    -1334.292,        8.5,          1.6!  !END!  schools
 50 ! X =      257.673,    -1339.766,        8.6,          1.6!  !END!  schools
 51 ! X =      230.346,    -1335.859,       21.7,          1.6!  !END!  schools
 52 ! X =      253.213,    -1339.378,         10,          1.6!  !END!  schools
 53 ! X =      282.338,    -1321.542,        4.3,          1.6!  !END!  schools
 54 ! X =      261.547,    -1343.293,          6,          1.6!  !END!  schools
 55 ! X =      257.737,    -1343.418,        7.5,          1.6!  !END!  schools
 56 ! X =      231.636,    -1335.572,         21,          1.6!  !END!  schools
 57 ! X =      261.774,    -1343.473,          6,          1.6!  !END!  schools
 58 ! X =      258.668,    -1338.048,        8.9,          1.6!  !END!  schools
 59 ! X =      256.976,    -1336.136,       10.9,          1.6!  !END!  schools
 60 ! X =      256.856,    -1341.853,        8.4,          1.6!  !END!  schools
 61 ! X =      250.943,    -1347.163,        9.8,          1.6!  !END!  schools
 62 ! X =      254.041,    -1342.818,        8.1,          1.6!  !END!  schools
 63 ! X =      230.633,    -1337.162,         21,          1.6!  !END!  schools
 64 ! X =      255.714,    -1337.269,       10.5,          1.6!  !END!  schools
 65 ! X =      256.083,    -1334.978,        8.9,          1.6!  !END!  schools
 66 ! X =      254.484,    -1339.400,        9.1,          1.6!  !END!  schools
 67 ! X =      263.358,    -1342.890,          4,          1.6!  !END!  schools
 68 ! X =      255.136,    -1340.753,          9,          1.6!  !END!  schools
 69 ! X =      261.211,    -1344.835,          6,          1.6!  !END!  schools
 70 ! X =      255.134,    -1334.696,        9.1,          1.6!  !END!  schools
 71 ! X =      260.387,    -1343.332,          6,          1.6!  !END!  schools
 72 ! X =      255.561,    -1340.240,          9,          1.6!  !END!  schools
 73 ! X =      259.026,    -1339.723,        7.9,          1.6!  !END!  schools
 74 ! X =      231.055,    -1336.463,         21,          1.6!  !END!  schools
 75 ! X =      255.824,    -1334.674,        9.1,          1.6!  !END!  schools
 76 ! X =      212.251,    -1340.608,          0,          1.6!  !END!  schools
 77 ! X =      214.952,    -1303.728,          0,          1.6!  !END!  schools
 78 ! X =      233.989,    -1333.911,         21,          1.6!  !END!  schools
 79 ! X =      257.424,    -1342.304,        8.1,          1.6!  !END!  schools
 80 ! X =      253.591,    -1333.903,       11.3,          1.6!  !END!  schools
 81 ! X =      259.082,    -1344.841,          6,          1.6!  !END!  schools
 82 ! X =      255.427,    -1337.778,       10.5,          1.6!  !END!  schools
 83 ! X =      254.097,    -1339.381,        9.1,          1.6!  !END!  schools
 84 ! X =      257.082,    -1341.971,        8.1,          1.6!  !END!  schools
 85 ! X =      257.088,    -1335.320,          9,          1.6!  !END!  schools
 86 ! X =      262.414,    -1345.263,        5.3,          1.6!  !END!  schools
 87 ! X =      242.687,    -1331.248,       17.3,          1.6!  !END!  schools
 88 ! X =      245.901,    -1332.554,         16,          1.6!  !END!  schools
 89 ! X =      215.072,    -1303.102,       38.5,          1.6!  !END!  schools
 90 ! X =      243.971,    -1343.445,       12.3,          1.6!  !END!  schools
 91 ! X =      218.486,    -1359.459,       17.5,          1.6!  !END!  schools
 92 ! X =      235.286,    -1328.287,       23.2,          1.6!  !END!  schools
 93 ! X =      261.713,    -1342.475,          6,          1.6!  !END!  schools
 94 ! X =      263.646,    -1344.879,          4,          1.6!  !END!  schools
 95 ! X =      258.101,    -1337.629,        8.7,          1.6!  !END!  schools
 96 ! X =      232.162,    -1335.650,         21,          1.6!  !END!  schools
 97 ! X =      258.943,    -1343.971,        6.7,          1.6!  !END!  schools
 98 ! X =      243.160,    -1331.738,       17.8,          1.6!  !END!  schools
 99 ! X =      280.640,    -1322.429,          6,          1.6!  !END!  schools
100 ! X =      220.145,    -1359.945,       16.7,          1.6!  !END!  schools
101 ! X =      262.291,    -1348.772,          4,          1.6!  !END!  schools
102 ! X =      261.154,    -1345.498,          6,          1.6!  !END!  schools
103 ! X =      261.837,    -1345.202,          6,          1.6!  !END!  schools
104 ! X =      262.120,    -1343.274,          5,          1.6!  !END!  schools
105 ! X =      255.686,    -1344.787,          7,          1.6!  !END!  schools
106 ! X =      260.530,    -1342.385,          6,          1.6!  !END!  schools
107 ! X =      256.908,    -1345.403,          6,          1.6!  !END!  schools
108 ! X =      259.395,    -1346.678,          6,          1.6!  !END!  schools
109 ! X =      259.684,    -1341.114,        6.6,          1.6!  !END!  schools
```

```
   110 ! X =       255.450,    -1344.667,          7,        1.6!  !END!  schools
   111 ! X =       259.749,    -1339.698,        7.9,        1.6!  !END!  schools
   112 ! X =       257.975,    -1335.106,          9,        1.6!  !END!  schools
   113 ! X =       260.196,    -1338.336,        4.6,        1.6!  !END!  schools
   114 ! X =       255.998,    -1338.347,        9.1,        1.6!  !END!  schools
   115 ! X =       258.237,    -1338.250,        8.9,        1.6!  !END!  schools
   116 ! X =       257.150,    -1338.692,          9,        1.6!  !END!  schools
   117 ! X =       258.588,    -1335.859,        7.3,        1.6!  !END!  schools
   118 ! X =       259.869,    -1340.131,        7.1,        1.6!  !END!  hospitals
   119 ! X =       259.249,    -1342.338,        6.4,        1.6!  !END!  hospitals
   120 ! X =       234.753,    -1328.927,         23,        1.6!  !END!  hospitals
   121 ! X =       258.005,    -1337.195,        8.7,        1.6!  !END!  hospitals
   122 ! X =       258.938,    -1337.040,        8.7,        1.6!  !END!  hospitals
   123 ! X =       259.810,    -1340.040,        7.1,        1.6!  !END!  hospitals
   124 ! X =       258.911,    -1337.019,        8.7,        1.6!  !END!  hospitals
   125 ! X =       261.035,    -1347.455,        4.9,        1.6!  !END!  hospitals
   126 ! X =       256.756,    -1336.676,       10.9,        1.6!  !END!  hospitals
   127 ! X =       258.716,    -1336.809,        6.9,        1.6!  !END!  hospitals
   128 ! X =       262.767,    -1347.511,        4.1,        1.6!  !END!  hospitals
   129 ! X =       257.001,    -1336.654,        9.2,        1.6!  !END!  hospitals
   130 ! X =       281.958,    -1320.835,          6,        1.6!  !END!  hospitals
   131 ! X =       263.915,    -1346.280,          4,        1.6!  !END!  hospitals
   132 ! X =       259.921,    -1339.982,        7.9,        1.6!  !END!  hospitals
   133 ! X =       257.732,    -1338.172,          9,        1.6!  !END!
universities
   134 ! X =       266.097,    -1343.767,          4,        1.6!  !END!
universities
   135 ! X =       292.706,    -1329.031,          0,        1.6!  !END!
universities
   136 ! X =       266.056,    -1343.563,          4,        1.6!  !END!
universities
   137 ! X =       255.450,    -1344.667,          7,        1.6!  !END!
universities
   138 ! X =       251.348,    -1333.693,       10.4,        1.6!  !END!
universities
   139 ! X =       259.153,    -1338.531,        7.4,        1.6!  !END!
universities
   140 ! X =       281.940,    -1320.888,          6,        1.6!  !END!
universities
   141 ! X =       262.292,    -1348.680,          4,        1.6!  !END!
universities

-------------
    a
     Data for each receptor are treated as a separate input subgroup
     and therefore must end with an input group terminator.

    b
     Receptor height above ground is optional.  If no value is entered,
     the receptor is placed on the ground.


IEOF
date
../code/calpuff.linux calpuff.inp
mv calpuff.inp $RUN/calpuff.$DATE.inp

@ DATE ++
date
end
end
```

APPENDIX C
AERMAP Input Runstream File

```
CO STARTING
   TITLEONE  Using 30m NAD27 DEM Data Files
   TITLETWO  With NAD83-Equivalent Anchor Point
   DATATYPE  DEM7

** Use 30m NAD27 DEM Files for Corpus Christi area
   DATAFILE  agua-dulce.dem
   DATAFILE  annaville.dem
   DATAFILE  aransas-pass.dem
   DATAFILE  banquete.dem
   DATAFILE  bayside.dem
   DATAFILE  bullshead-creek.dem
   DATAFILE  chapman-ranch.dem
   DATAFILE  concordia.dem
   DATAFILE  corpus-christi.dem
   DATAFILE  crane-islands-nw.dem
   DATAFILE  crane-islands-sw.dem
   DATAFILE  cranell.dem
   DATAFILE  driscoll-east.dem
   DATAFILE  driscoll-west.dem
   DATAFILE  edroy.dem
   DATAFILE  gregory.dem
   DATAFILE  kingsville-east.dem
   DATAFILE  kingsville-nw.dem
   DATAFILE  kingsville-west.dem
   DATAFILE  laureles-ranch.dem
   DATAFILE  mathis.dem
   DATAFILE  mission-bay.dem
   DATAFILE  odem.dem
   DATAFILE  orange-grove.dem
   DATAFILE  oso-creek-ne.dem
   DATAFILE  oso-creek-nw.dem
   DATAFILE  papalote.dem
   DATAFILE  petronila-ne.dem
   DATAFILE  pita-island.dem
   DATAFILE  port-ingleside.dem
   DATAFILE  port-aransas.dem
   DATAFILE  portland.dem
   DATAFILE  ricardo.dem
   DATAFILE  rincon-bend.dem
   DATAFILE  riviera-beach-ne.dem
   DATAFILE  riviera-beach-nw.dem
   DATAFILE  robstown.dem
   DATAFILE  sandia.dem
   DATAFILE  san-patricio.dem
   DATAFILE  sinton-east.dem
   DATAFILE  sinton-west.dem
   DATAFILE  south-bird-island.dem
   DATAFILE  south-bird-island-nw.dem
   DATAFILE  taft.dem
   DATAFILE  tynan.dem
   DATAFILE  west-sinton.dem
   DATAFILE  woodsboro.dem

** Request ALL Debug Output Files
   DEBUGOPT  ALL

   DOMAINXY  612000.0 3043000.0 14  684000.0 3115000.0 14
```

```
** Use NAD83 Anchor Point
   ANCHORXY  612000.0 3043000.0    612000.0 3043000.0  14  4

   RUNORNOT  RUN
CO FINISHED

** Source locations in UTM NAD83
SO STARTING
   LOCATION 1 POINT 654588.3595 3077479.421
   LOCATION 2 POINT 654620.2638 3077141.858
   LOCATION 3 POINT 654647.4657 3077172.125
   LOCATION 4 POINT 654650.2142 3076957.189
   LOCATION 5 POINT 654652.9626 3076742.253
   LOCATION 6 POINT 654652.9626 3076742.253
   LOCATION 7 POINT 654653.3592 3076711.231
   LOCATION 8 POINT 654655.7249 3076526.209
   LOCATION 9 POINT 654656.9006 3076434.252
   LOCATION 10 POINT 654674.6533 3077203.499
   LOCATION 11 POINT 654675.0501 3077172.478
   LOCATION 12 POINT 654675.4327 3077142.564
   LOCATION 13 POINT 654675.8295 3077111.542
   LOCATION 14 POINT 654704.5903 3077019.938
   LOCATION 15 POINT 654729.6164 3077143.257
   LOCATION 16 POINT 654735.1303 3076712.277
   LOCATION 17 POINT 654738.2767 3076466.319
   LOCATION 18 POINT 654739.0704 3076404.276
   LOCATION 19 POINT 654757.2009 3077143.61
   LOCATION 20 POINT 654759.9655 3076927.566
   LOCATION 21 POINT 654759.9655 3076927.566
   LOCATION 22 POINT 654762.3188 3076743.652
   LOCATION 23 POINT 654762.3188 3076743.652
   LOCATION 24 POINT 654762.3188 3076743.652
   LOCATION 25 POINT 654764.6862 3076558.629
   LOCATION 26 POINT 654765.48 3076496.586
   LOCATION 27 POINT 654783.6083 3077235.92
   LOCATION 28 POINT 654783.6083 3077235.92
   LOCATION 29 POINT 654791.4922 3076619.918
   LOCATION 30 POINT 654792.272 3076558.982
   LOCATION 31 POINT 654793.4487 3076467.025
   LOCATION 32 POINT 654811.5897 3077205.252
   LOCATION 33 POINT 654817.8866 3076713.336
   LOCATION 34 POINT 654818.6807 3076651.292
   LOCATION 35 POINT 654819.4607 3076590.357
   LOCATION 36 POINT 654820.2548 3076528.314
   LOCATION 37 POINT 654839.3662 3077113.635
   LOCATION 38 POINT 654844.884 3076682.655
   LOCATION 39 POINT 654866.1704 3077174.924
   LOCATION 40 POINT 654868.9228 3076959.987
   LOCATION 41 POINT 654869.7173 3076897.944
   LOCATION 42 POINT 654870.1003 3076868.03
   LOCATION 43 POINT 654870.1003 3076868.03
   LOCATION 44 POINT 654871.292 3076774.965
   LOCATION 45 POINT 654872.0723 3076714.03
   LOCATION 46 POINT 654873.2639 3076620.964
   LOCATION 47 POINT 654892.5628 3077268.342
   LOCATION 48 POINT 654898.48 3076806.34
   LOCATION 49 POINT 654899.2604 3076745.405
   LOCATION 50 POINT 654924.49 3076929.672
   LOCATION 51 POINT 654927.2431 3076714.736
   LOCATION 52 POINT 654952.4724 3076899.004
   LOCATION 53 POINT 654953.253 3076838.068
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LOCATION 54 POINT 654977.0988 3077053.345
LOCATION 55 POINT 654979.4555 3076869.431
LOCATION 56 POINT 654982.2238 3076653.387
LOCATION 57 POINT 655004.2858 3077084.721
LOCATION 58 POINT 655006.6572 3076899.698
LOCATION 59 POINT 655031.0751 3077147.118
LOCATION 60 POINT 655032.2681 3077054.053
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LOCATION 62 POINT 655037.7926 3076623.072
LOCATION 63 POINT 655057.8782 3077208.407
LOCATION 64 POINT 655059.455 3077085.428
LOCATION 65 POINT 655059.8528 3077054.406
LOCATION 66 POINT 655060.2363 3077024.492
LOCATION 67 POINT 655060.6341 3076993.471
LOCATION 68 POINT 655062.6085 3076839.47
LOCATION 69 POINT 655063.4039 3076777.427
LOCATION 70 POINT 655064.1852 3076716.491
LOCATION 71 POINT 655064.1852 3076716.491
LOCATION 72 POINT 655085.6567 3077116.791
LOCATION 73 POINT 655086.0545 3077085.769
LOCATION 74 POINT 655087.2337 3076993.812
LOCATION 75 POINT 655087.2337 3076993.812
LOCATION 76 POINT 655088.8107 3076870.833
LOCATION 77 POINT 655089.2085 3076839.811
LOCATION 78 POINT 655089.2085 3076839.811
LOCATION 79 POINT 655089.2085 3076839.811
LOCATION 80 POINT 655089.6063 3076808.789
LOCATION 81 POINT 655089.6063 3076808.789
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LOCATION 83 POINT 655119.1666 3076655.142
LOCATION 84 POINT 655140.044 3077178.434
LOCATION 85 POINT 655146.7521 3076655.496
LOCATION 86 POINT 655169.9882 3076994.873
LOCATION 87 POINT 655197.1749 3077026.249
LOCATION 88 POINT 655197.573 3076995.227
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LOCATION 91 POINT 655252.1557 3076964.901
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LOCATION 94 POINT 655282.5002 3076750.319
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LOCATION 111 POINT 655386.3334 3077181.596
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LOCATION 282 POINT 645074.578 3078962.667
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LOCATION 357 POINT 645503.0216 3079705.783
LOCATION 358 POINT 645503.7554 3079644.849

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LOCATION 361 POINT 645553.7183 3080076.484
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LOCATION 814 POINT 677315.8708 3078745.54
LOCATION 815 POINT 677367.7923 3078900.347
LOCATION 816 POINT 677421.1527 3079024.144
LOCATION 817 POINT 677454.1526 3078655.587
LOCATION 818 POINT 677532.7608 3078871.738
LOCATION 819 POINT 677585.2081 3079057.584
LOCATION 820 POINT 677695.9058 3078967.228
LOCATION 821 POINT 677748.7339 3079059.988
LOCATION 822 POINT 677473.0713 3079178.951
LOCATION 823 POINT 677558.9766 3078965.215
LOCATION 824 POINT 677262.9628 3078590.72
LOCATION 825 POINT 653312.9066 3076663.139
LOCATION 826 POINT 653339.3262 3076755.446
LOCATION 827 POINT 653341.6577 3076571.532
LOCATION 828 POINT 653395.071 3076633.155
LOCATION 829 POINT 653450.6355 3076602.833
LOCATION 830 POINT 653451.4085 3076541.898
LOCATION 831 POINT 653478.6006 3076573.269
LOCATION 832 POINT 671411.8097 3085894.712
LOCATION 833 POINT 671439.8172 3085864.081
LOCATION 834 POINT 671357.1181 3085862.905
LOCATION 835 POINT 671330.0953 3085893.55
LOCATION 836 POINT 670923.4765 3091367.872
LOCATION 837 POINT 671032.7073 3091369.425
LOCATION 838 POINT 671032.7073 3091369.425
LOCATION 839 POINT 671032.7073 3091369.425
LOCATION 840 POINT 671032.7073 3091369.425
LOCATION 841 POINT 670896.3636 3091336.457
LOCATION 842 POINT 671032.7073 3091369.425
LOCATION 843 POINT 671006.1377 3091369.047
LOCATION 844 POINT 671002.1995 3091646.045
LOCATION 845 POINT 670595.7843 3091363.22
LOCATION 846 POINT 671112.3106 3091585.551

LOCATION 847 POINT 671137.9969 3091647.976
LOCATION 848 POINT 670923.9174 3091336.849
LOCATION 849 POINT 670923.9174 3091336.849
LOCATION 850 POINT 670896.8043 3091305.433
LOCATION 851 POINT 670896.8043 3091305.433
LOCATION 852 POINT 670896.8043 3091305.433
LOCATION 853 POINT 666119.4539 3082865.112
LOCATION 854 POINT 679054.9535 3083266.228
LOCATION 855 POINT 679082.5267 3083266.638
LOCATION 856 POINT 652468.5741 3078529.568
LOCATION 857 POINT 652283.0796 3078004.212
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LOCATION 859 POINT 680561.0569 3072175.129
LOCATION 860 POINT 680562.4273 3072083.166
LOCATION 861 POINT 680561.0569 3072175.129
LOCATION 862 POINT 680589.118 3072144.517
LOCATION 863 POINT 680561.0569 3072175.129
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LOCATION 866 POINT 680561.0569 3072175.129
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LOCATION 868 POINT 670120.1454 3064912.898
LOCATION 869 POINT 670454.1654 3064517.531
LOCATION 870 POINT 670179.9887 3064513.688
LOCATION 871 POINT 670180.4076 3064483.773
LOCATION 872 POINT 670180.4076 3064483.773
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LOCATION 875 POINT 670454.1654 3064517.531
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LOCATION 877 POINT 626419.5413 3083553.939
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LOCATION 879 POINT 657429.5949 3077886.189
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LOCATION 883 POINT 657182.929 3077912.899
LOCATION 884 POINT 657238.484 3077883.702
LOCATION 885 POINT 656910.8458 3077848.418
LOCATION 886 POINT 656718.7496 3077845.927
LOCATION 887 POINT 656527.6385 3077843.451
LOCATION 888 POINT 656335.5424 3077840.965
LOCATION 889 POINT 672955.0939 3085054.565
LOCATION 890 POINT 673166.2536 3085642.735
LOCATION 891 POINT 673061.3915 3085333.145
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LOCATION 894 POINT 671443.3156 3085618.108
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LOCATION 898 POINT 671522.8404 3085773.281
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LOCATION 901 POINT 641447.1299 3075533.521
LOCATION 902 POINT 641421.6031 3075441.257
LOCATION 903 POINT 641394.0161 3075440.934
LOCATION 904 POINT 641421.6031 3075441.257
LOCATION 905 POINT 641421.6031 3075441.257
LOCATION 906 POINT 641338.8421 3075440.29
LOCATION 907 POINT 641394.0161 3075440.934

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LOCATION 915 POINT 615103.3298 3062605.351
LOCATION 916 POINT 615105.6577 3062359.421
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LOCATION 924 POINT 616818.8436 3049389.091
LOCATION 925 POINT 616818.8436 3049389.091
LOCATION 926 POINT 616511.849 3050002.14
LOCATION 927 POINT 616818.8436 3049389.091
LOCATION 928 POINT 616211.5147 3049814.264
LOCATION 929 POINT 616818.8436 3049389.091
LOCATION 930 POINT 616818.8436 3049389.091
LOCATION 931 POINT 616429.808 3049908.296
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LOCATION 939 POINT 616569.0848 3049694.696
LOCATION 940 POINT 615830.688 3049471.639
LOCATION 941 POINT 615858.9094 3049410.973
LOCATION 942 POINT 615914.1971 3049411.497
LOCATION 943 POINT 615996.7302 3049350.239
LOCATION 944 POINT 616024.3742 3049350.502
LOCATION 945 POINT 615941.1479 3049380.733
LOCATION 946 POINT 616024.3742 3049350.502
LOCATION 947 POINT 615968.7919 3049380.995
LOCATION 948 POINT 615996.7302 3049350.239
LOCATION 949 POINT 615804.315 3049441.476
LOCATION 950 POINT 615804.315 3049441.476
LOCATION 951 POINT 616569.0848 3049694.696
LOCATION 952 POINT 615775.8002 3049533.16
LOCATION 953 POINT 616405.1997 3049693.134
LOCATION 954 POINT 616295.9091 3049661.072
LOCATION 955 POINT 615363.2406 3049621.211
LOCATION 956 POINT 615473.1198 3049591.229
LOCATION 957 POINT 615253.947 3049589.16
LOCATION 958 POINT 615450.1225 3049099.116
LOCATION 959 POINT 616019.9885 3049812.444
LOCATION 960 POINT 616105.7296 3049413.316
LOCATION 961 POINT 616376.9762 3049753.798
LOCATION 962 POINT 616569.0848 3049694.696
LOCATION 963 POINT 615751.3671 3049193.919
LOCATION 964 POINT 615724.2996 3049132.729
LOCATION 965 POINT 615724.2996 3049132.729
LOCATION 966 POINT 615833.0189 3049225.713
LOCATION 967 POINT 615777.2589 3049379.179
LOCATION 968 POINT 615586.4884 3049192.358

LOCATION 969 POINT 615560.1141 3049162.196
LOCATION 970 POINT 615560.7007 3049100.161
LOCATION 971 POINT 615804.6089 3049410.458
LOCATION 972 POINT 615915.0797 3049318.444
LOCATION 973 POINT 615859.7915 3049317.92
LOCATION 974 POINT 616817.0752 3049574.089
LOCATION 975 POINT 616569.0848 3049694.696
LOCATION 976 POINT 616105.7296 3049413.316
LOCATION 977 POINT 648885.556 3078361.906
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LOCATION 979 POINT 648565.2533 3077649.909
LOCATION 980 POINT 648647.2385 3077712.968
LOCATION 981 POINT 648673.4545 3077744.317
LOCATION 982 POINT 648700.2875 3077805.59
LOCATION 983 POINT 648647.2385 3077712.968
LOCATION 984 POINT 648699.9059 3077836.612
LOCATION 985 POINT 648727.1065 3077867.972
LOCATION 986 POINT 648539.7855 3077557.626
LOCATION 987 POINT 648566.0021 3077588.974
LOCATION 988 POINT 648512.2026 3077557.287
LOCATION 989 POINT 648484.6198 3077556.949
LOCATION 990 POINT 648511.8216 3077588.309
LOCATION 991 POINT 648954.1327 3077193.737
LOCATION 992 POINT 648620.4186 3077650.587
LOCATION 993 POINT 648486.8918 3077371.929
LOCATION 994 POINT 649027.4068 3077963.64
LOCATION 995 POINT 648735.4332 3077191.045
LOCATION 996 POINT 648763.7801 3077129.342
LOCATION 997 POINT 648487.6401 3077310.995
LOCATION 998 POINT 649081.2032 3077995.329
LOCATION 999 POINT 648376.7825 3077432.63
LOCATION 1000 POINT 648321.6163 3077431.953
LOCATION 1001 POINT 648377.5439 3077370.587
LOCATION 1002 POINT 648432.0925 3077341.339
LOCATION 1003 POINT 648943.1457 3078085.597
LOCATION 1004 POINT 648916.3147 3078024.323
LOCATION 1005 POINT 648915.564 3078085.258
LOCATION 1006 POINT 648889.3358 3078055.017
LOCATION 1007 POINT 648376.0212 3077494.672
LOCATION 1008 POINT 648320.8553 3077493.995
LOCATION 1009 POINT 648403.9849 3077463.989
LOCATION 1010 POINT 648430.9637 3077433.295
LOCATION 1011 POINT 648760.7544 3077375.295
LOCATION 1012 POINT 648706.3372 3077313.682
LOCATION 1013 POINT 648762.2673 3077252.319
LOCATION 1014 POINT 648839.8598 3077592.342
LOCATION 1015 POINT 648812.6588 3077560.982
LOCATION 1016 POINT 653859.6888 3076670.082
LOCATION 1017 POINT 653915.6491 3076608.741
LOCATION 1018 POINT 654134.7446 3076581.612
LOCATION 1019 POINT 653671.6859 3076421.696
LOCATION 1020 POINT 653999.3672 3076456.89
LOCATION 1021 POINT 654026.1772 3076518.176
LOCATION 1022 POINT 654053.3679 3076549.549
LOCATION 1023 POINT 654079.7822 3076641.857
LOCATION 1024 POINT 654078.9919 3076703.901
LOCATION 1025 POINT 653808.2361 3076454.458
LOCATION 1026 POINT 653754.2472 3076360.692
LOCATION 1027 POINT 653890.798 3076393.455
LOCATION 1028 POINT 653888.0635 3076608.39
LOCATION 1029 POINT 654612.0046 3077787.775

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   LOCATION 1030 POINT 654639.1908 3077819.149
   LOCATION 1031 POINT 654665.9941 3077880.438
   LOCATION 1032 POINT 654638.794 3077850.171
SO FINISHED

** Receptor locations in UTM NAD83
RE STARTING
   GRIDCART GRD1 STA 0
   GRIDCART GRD1 XYINC  614000.0  18  4000.0  3045000.0  18  4000.0
   GRIDCART GRD1 END
   DISCCART 661220.199 3064485.993
   DISCCART 655302.323 3072165.826
   DISCCART 654528     3071047.797
   DISCCART 656005.053 3071177.53
   DISCCART 656522.187 3069300.362
   DISCCART 663964.85  3087573.033
   DISCCART 660005.152 3059372.47
   DISCCART 676077.307 3087411.508
   DISCCART 656662.233 3066088.578
   DISCCART 665290.068 3084266.511
   DISCCART 618171.577 3051893.608
   DISCCART 660906.207 3062572.486
   DISCCART 655987.833 3065229.963
   DISCCART 658656.277 3070923.822
   DISCCART 656328.858 3073739.289
   DISCCART 631539.434 3074583.696
   DISCCART 665706.213 3087234.475
   DISCCART 680931.037 3089017.326
   DISCCART 655155.279 3073795.117
   DISCCART 657562.825 3076011.477
   DISCCART 627063.337 3071621.852
   DISCCART 656111.327 3076085.746
   DISCCART 662092.112 3066928.899
   DISCCART 654976.656 3070653.489
   DISCCART 657806.915 3065734.387
   DISCCART 630725.803 3074737.76
   DISCCART 658956.912 3067842.67
   DISCCART 658141.401 3069432.178
   DISCCART 657544.019 3066993.144
   DISCCART 657615.883 3069887.433
   DISCCART 657980.506 3075493.875
   DISCCART 657555.871 3068131.357
   DISCCART 654836.901 3070866.681
   DISCCART 657325.824 3068990.505
   DISCCART 654647.223 3074989.835
   DISCCART 666119.697 3084807.635
   DISCCART 657190.533 3075237.579
   DISCCART 681524.214 3088200.561
   DISCCART 656277.055 3069654.021
   DISCCART 658671.381 3070824.286
   DISCCART 661556.977 3065937.72
   DISCCART 657371.293 3073916.798
   DISCCART 665344.54  3087474.421
   DISCCART 665303.765 3086427.708
   DISCCART 662826.295 3065276.473
   DISCCART 659379.718 3068986.286
   DISCCART 615437.373 3107729.589
   DISCCART 657342.484 3076132.723
   DISCCART 656919.642 3070739.43
   DISCCART 629901.104 3075098.958
   DISCCART 652505.094 3071207.234
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DISCCART	681743.258	3088234.897
DISCCART	660691.266	3067187.317
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DISCCART	631185.158	3075358.788
DISCCART	660912.594	3067006.294
DISCCART	657938.867	3072414.887
DISCCART	656298.526	3074332.862
DISCCART	656069.501	3068697.245
DISCCART	650107.399	3063574.633
DISCCART	653259.888	3067799.314
DISCCART	630161.314	3073808.702
DISCCART	655025.396	3073239.386
DISCCART	655435.082	3075491.941
DISCCART	653765.518	3071161.103
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DISCCART	654500.049	3075788.029
DISCCART	659540.62	3067172.141
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DISCCART	658261.161	3070756.868
DISCCART	630592.489	3074490.342
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DISCCART	615197.966	3107081.317
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DISCCART	653381.713	3071187.268
DISCCART	656290.929	3068577.092
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DISCCART	661512.155	3065229.011
DISCCART	642222.682	3079422.68
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DISCCART	615328.612	3107697.515
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DISCCART	617725.883	3052045.52
DISCCART	634937.632	3082479.327
DISCCART	660871.931	3067990.908
DISCCART	662740.318	3065583.391
DISCCART	657385.301	3072838.752
DISCCART	631705.369	3075272.473
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DISCCART	680039.712	3087393.6
DISCCART	619360.66	3051537.341
DISCCART	661321.299	3061772.358
DISCCART	660258.316	3065021.805
DISCCART	660941.119	3065300.112
DISCCART	661259.181	3067195.956
DISCCART	654852.893	3065827.127
DISCCART	659700.951	3068102.88
DISCCART	656052.372	3065196.44
DISCCART	658492.732	3063891.614
DISCCART	658886.592	3069372.103
DISCCART	654621.544	3065949.398
DISCCART	658978.728	3070767.364
DISCCART	657308.576	3075329.981
DISCCART	659448.183	3072102.209
DISCCART	655286.483	3072171.164

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   DISCCART 659088.867 3070337.738
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   DISCCART 634397.025 3081857.222
   DISCCART 657297.906 3073268.686
   DISCCART 658226.594 3073403.787
   DISCCART 659032.46  3070428.974
   DISCCART 658199.697 3073425.599
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   DISCCART 656069.787 3073804.653
   DISCCART 658010.668 3073635.896
   DISCCART 661817.924 3063005.682
   DISCCART 656313.003 3073822.195
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   DISCCART 662979.846 3064196.962
   DISCCART 659144.134 3070483.631
   DISCCART 657008.713 3072310.821
   DISCCART 665191.823 3066632.682
   DISCCART 665154.569 3066833.864
   DISCCART 654621.544 3065949.398
   DISCCART 650764.915 3076849.03
   DISCCART 658410.479 3071929.024
   DISCCART 681361.241 3088888.584
   DISCCART 661324.055 3061862.155
   DISCCART 657418.018 3061721.224
RE FINISHED


OU STARTING
   RECEPTOR  AERMAP_STAR.REC
   SOURCLOC  AERMAP_STAR.SRC
   DEBUGHIL  CALCHCDB_STAR.OUT
   DEBUGREC  REC1DB_STAR.OUT  REC2DB_STAR.OUT  REC3DB_STAR.OUT
OU FINISHED
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APPENDIX D
AERMET Input Runstream File

```
JOB
REPORT TC_S1.RPT
MESSAGES TC_S1.MSG
UPPERAIR
DATA 12924.fsl FSL 1
EXTRACT TC_UA.IQA
QAOUT TC_UA.OQA
XDATES 06/10/1 TO 06/11/30
LOCATION 12924 27.773N 97.513W 6 13.4
AUDIT UATT UAWS UALR
SURFACE
DATA 129242006.3505 ISHD 1
EXTRACT TC_SF.IQA
QAOUT TC_SF.OQA
XDATES 06/10/1 TO 06/11/30
LOCATION 12924 27.773N 97.513W 6 13.4
** 725180 14735 ALBANY COUNTY AP US US NY KALB +42750 -073800 +00838
ONSITE
DATA C633_Met.txt
QAOUT TC_C633.OQA
XDATES 06/10/1 TO 06/11/30
LOCATION C633 27.8292N 97.5422W 0 20.0
READ 1 OSYR OSMO OSDY OSHR TT01 WS02 WD02 SA02 RH01
FORMAT 1 (4(I2,1X),4(F7.2,1X),F7.2)
OSHEIGHTS 3.0 10.0
RANGE TT -5 <= 42 -999
RANGE WS 0 <= 17 -999
RANGE WD 0 <= 360 -999
RANGE SA 0 <= 100 -999
RANGE RH 0 <= 100 -999
THRESHOLD 0.3
1
TC_S2.inp
JOB
REPORT TC_S2.RPT
MESSAGES TC_S2.MSG
UPPERAIR
QAOUT TC_UA.OQA
SURFACE
QAOUT TC_SF.OQA
ONSITE
QAOUT TC_C633.OQA
MERGE
OUTPUT TC_MR.MET
XDATES 06/10/01 06/11/30
1
TC_S3.INP
JOB
REPORT TC_S3.RPT
MESSAGES TC_S3.MSG
METPREP
DATA TC_MR.MET
OUTPUT TC_MP.SFC
PROFILE TC_MP.PFL
LOCATION C633 27.8292N 97.5422W 0 20.0
METHOD REFLEVEL SUBNWS
METHOD WIND_DIR RANDOM
NWS_HGT WIND 10.0
FREQ_SECT ANNUAL 1
SECTOR 1 0 360
SITE_CHAR 1 1 0.18 0.75 1.0
** Albedo and Bowen Ratio above set to defaults suggested by TCEQ for San Patricio
** in support of permit modeling. Surface roughness for now at 1.0
1
```

APPENDIX E
AERMOD Input Runstream File

```
** Corpus Christi Domain Test Case - Benzene

CO STARTING
CO TITLEONE The 72 km x 72 km Corpus Christi regional domain
CO TITLETWO Benzene STARS 2005 unique EPN
** Implement deposition algorithms by using TOXICS and DDEP and WDEP
secondary keywords
CO MODELOPT CONC DEPOS DDEP WDEP TOXICS
** Define seasonal categories for each calendar month
CO GDSEASON  3 3 5 5 5 1 1 1 2 2 2 3
** Define land use category for each of the 36 wind direction sectors
** Use category 5 (suburban areas, grassy) for all sectors
CO GDLANUSE  36*5
CO AVERTIME  1  8
CO POLLUTID  BENZENE
CO RUNORNOT  RUN
CO SAVEFILE
CO ERRORFIL  ERRORS.OUT
CO FINISHED

SO STARTING
** Use INCLUDED keyword to include source x, y, z from AERMAP
** SO INCLUDED  C:\TEST\AERMAP\AERMAP_TEST83.SRC
SO INCLUDED  AERMAP_STAR.SRC

** Point Source           QS       HS    TS     VS      DS
** Parameters:           ----     ----  ----   ----     ---
SO SRCPARAM 1 0.002794655 14.63 298.56 0.00305 0.91463
SO SRCPARAM 2 0.006108127 6.1 294 0.01 0.01
SO SRCPARAM 3 0.000744438 76.22 634.11 13.90244 1.21951
SO SRCPARAM 4 0.002429933 17.68 298.56 0.00305 0.91463
SO SRCPARAM 5 0.001295731 3.05 294 0.01 0.01
SO SRCPARAM 6 0.000122806 6.1 298.56 0.00305 0.91463
SO SRCPARAM 7 0.000154305 1.22 294 0.01 0.01
SO SRCPARAM 8 0.000415373 15.24 298.56 0.00305 0.91463
SO SRCPARAM 9 0.003580346 14.33 298.56 0.00305 0.91463
SO SRCPARAM 10 0.002634501 33.54 396.89 5.40854 1.37195
SO SRCPARAM 11 0.004441805 3.05 294 0.01 0.01
SO SRCPARAM 12 0.000332845 6.1 294 0.01 0.01
SO SRCPARAM 13 0.000648889 6.1 294 0.01 0.01
SO SRCPARAM 14 0.000498448 6.1 298.56 0.00305 0.91463
SO SRCPARAM 15 0.006561625 6.1 294 0.01 0.01
SO SRCPARAM 16 0.001410725 11.89 306.89 4.87805 3.35366
SO SRCPARAM 17 0.001470196 12.2 298.56 0.00305 0.91463
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SO SRCPARAM 19 0.000116548 7.62 294 0.01 0.01
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SO SRCPARAM 913 0.000830536 2.13 295.22 0.00305 0.91463
SO SRCPARAM 914 0.000227552 0.91 294 0.01 0.01
SO SRCPARAM 915 0.000118291 13.72 294 0.01 0.01
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SO SRCPARAM 917 0.000343344 9.15 296.33 0.00305 0.91463
SO SRCPARAM 918 0.013854521 14.63 296.33 0.00305 0.91463
SO SRCPARAM 919 0.012927166 16.46 295.22 0.00305 0.91463
SO SRCPARAM 920 0.013852694 16.46 296.33 0.00305 0.91463
SO SRCPARAM 921 0.000286645 0.91 294 0.01 0.01
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SO SRCPARAM 923 0.000131248 9.15 321.89 0.00305 0.91463
SO SRCPARAM 924 0.000283495 16.46 321.89 0.00305 0.91463
SO SRCPARAM 925 0.000206847 9.15 321.89 0.00305 0.91463
SO SRCPARAM 926 0.011545462 0.91 294 0.01 0.01
SO SRCPARAM 927 0.001215197 16.46 321.89 0.00305 0.91463
SO SRCPARAM 928 0.001313507 16.46 302.44 0.00305 0.91463
SO SRCPARAM 929 0.000803237 16.46 302.44 0.00305 0.91463
SO SRCPARAM 930 0.000536541 16.46 302.44 0.00305 0.91463
SO SRCPARAM 931 0.000755988 42.68 1255.22 0.01 0.1
SO SRCPARAM 932 0.007696971 0.91 294 0.01 0.01
SO SRCPARAM 933 0.000247796 36.59 305.22 9.87805 1.82927
SO SRCPARAM 934 0.004948054 0.91 294 0.01 0.01
SO SRCPARAM 935 0.045616181 22.87 440.78 5.80793 2.13415
SO SRCPARAM 936 0.007181776 57.93 1273 0.01 0.1
SO SRCPARAM 937 0.000264596 5.18 299.67 0.00305 0.91463
SO SRCPARAM 938 0.000152248 3.05 310.78 0.00305 0.05183
SO SRCPARAM 939 0.000198447 9.15 296.89 0.00305 0.91463
SO SRCPARAM 940 0.002473066 12.5 294 0.01 0.01
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SO SRCPARAM 943 0.000214197 17.07 377.44 25 0.07622
SO SRCPARAM 944 0.000109198 17.07 377.44 19.5122 0.07622
SO SRCPARAM 945 0.000115498 6.1 388.56 0.00305 0.91463
SO SRCPARAM 946 0.000311845 12.2 321.89 0.30488 0.91463
SO SRCPARAM 947 0.000172197 12.2 321.89 0.30488 0.91463
SO SRCPARAM 948 0.000141748 67.07 333 25.30488 0.58841
SO SRCPARAM 949 0.000943934 14.02 306.33 0.00305 0.30488
SO SRCPARAM 950 0.000348594 44.51 377.44 0.03049 0.10366
SO SRCPARAM 951 0.009896107 6.1 305.22 9.14634 0.30488
SO SRCPARAM 952 0.000136498 6.1 299.67 0.30488 0.15244
SO SRCPARAM 953 0.000344394 21.95 441.33 15.51829 3.65854
SO SRCPARAM 954 0.001462626 21.34 394.11 15.54878 0.91463
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SO SRCPARAM 970 0.000119698 0.3 321.89 0.00305 0.91463
SO SRCPARAM 971 0.002473066 12.2 294 0.01 0.01
SO SRCPARAM 972 0.001494125 12.8 296.89 0.00305 0.91463
SO SRCPARAM 973 0.005947889 3.05 294 0.01 0.01
SO SRCPARAM 974 0.004769483 10.67 294 0.01 0.01
SO SRCPARAM 975 0.00152573 6.71 296.89 0.00305 0.91463
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SO SRCPARAM 1020 0.010324889 12.8 294.11 0.00305 0.91463
SO SRCPARAM 1021 0.000300295 12.8 294.11 0.00305 0.91463
SO SRCPARAM 1022 0.001572958 12.8 294.11 0.00305 0.91463
SO SRCPARAM 1023 0.006138052 14.63 294.11 0.00305 0.91463
SO SRCPARAM 1024 0.002342553 17.07 310.78 0.00305 0.91463
SO SRCPARAM 1025 0.0055912 14.63 305.22 0.00305 0.91463
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SO SRCPARAM 1026 0.0055912 14.63 305.22 0.00305 0.91463
SO SRCPARAM 1027 0.007023407 14.63 305.22 0.00305 0.91463
SO SRCPARAM 1028 0.007548724 0.91 294 0.01 0.01
SO SRCPARAM 1029 0.002290327 0.91 294 0.01 0.01
SO SRCPARAM 1030 0.001199983 0.91 294 0.01 0.01
SO SRCPARAM 1031 0.000249896 0.91 294 0.01 0.01
SO SRCPARAM 1032 0.003710471 0.91 294 0.01 0.01
** Specify source parameters for gas deposition
** Parameters: Src Rng     Da      Dw    rcl   Henry's Law constant
**                      (cm2/s) (cm2/s)(s/cm) (Pa-m3/mol)
**                ----    ------  ------ ------ ----
SO GASDEPOS  1-1032 0.08962 104000 25100  557
SO DEPOUNIT  1.0E6 GRAMS/SEC MICROGRAMS/M**2
SO SRCGROUP  ALL
SO SRCGROUP  CE 1-134
SO SRCGROUP  FE 135-208
SO SRCGROUP  FW 209-366
SO SRCGROUP  VE 367-547
SO SRCGROUP  VW 548-658
SO SRCGROUP  OT 659-1032
SO FINISHED

RE STARTING
** Use INCLUDED keyword to include receptor x, y, z and hc from AERMAP
RE INCLUDED AERMAP_STAR.REC
RE FINISHED

ME STARTING
ME DAYRANGE 274-334
ME SURFFILE  TC_C633.SFC
ME PROFFILE  TC_C633.PFL
ME SURFDATA  12924  2006  CORPUS_CHRISTI,TX
ME UAIRDATA  12924  2006  CORPUS_CHRISTI,TX
ME SITEDATA  633  2006 C633
ME PROFBASE  20.0  METERS
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  8  FIRST
OU PLOTFILE  1    ALL   FIRST   PLT1ALL.FST
OU PLOTFILE  8    ALL   FIRST   PLT8ALL.FST
OU PLOTFILE  1    CE   FIRST   PLT1CE.FST
OU PLOTFILE  8    CE   FIRST   PLT8CE.FST
OU PLOTFILE  1    FE   FIRST   PLT1FE.FST
OU PLOTFILE  8    FE   FIRST   PLT8FE.FST
OU PLOTFILE  1    FW   FIRST   PLT1FW.FST
OU PLOTFILE  8    FW   FIRST   PLT8FW.FST
OU PLOTFILE  1    VE   FIRST   PLT1VE.FST
OU PLOTFILE  8    VE   FIRST   PLT8VE.FST
OU PLOTFILE  1    VW   FIRST   PLT1VW.FST
OU PLOTFILE  8    VW   FIRST   PLT8VW.FST
OU PLOTFILE  1    OT   FIRST   PLT1OT.FST
OU PLOTFILE  8    OT   FIRST   PLT8OT.FST
OU FINISHED
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